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*Small- and medium-sized Enterprises
in Germany and China – Similarities
and Dissimilarities*

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Andreas Oberheitmann / Andree Elsner
Chen Shengwei / Xu Xuanguo (Eds.)

KCBT Insights into German and Chinese Business & Technology



**German-Sino Competence Center
of Business & Technology**
der FOM Hochschule für Oekonomie & Management

Andreas Oberheitmann / Andree Elsner / Chen Shengwei / Xu Xuanguo (Eds.)

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***Small- and medium-sized Enterprises
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Chen Shengwei / Xu Xuanguo (eds.)

With contributions from:

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Jörg Freiling, Zhang Fuhong, Markus Göbel, Zhao Guoqing,
Wang Hongzhe, Chai Jing, Zhang Liang, Feng Lin, Yang Liu,
Andreas Merbecks, Hartmut-Heinrich Meyer, Huo Ming,
Andreas Oberheitmann, Maria Jade C. Opulencia, Marcel Seidel,
Li Weibang, Ge Yongbo, Zhou Yuxi and Xu Xuanguo

Welcome Note

Celebrating the 15 year cooperation between FOM and SDAU

In 2018, FOM University of Applied Sciences and Shandong Agricultural University (SDAU) are cooperating since 15 years, so far mainly with respect to higher education on management science and economics in a joint program. It was the wish of both universities to widen their relations also with respect to research, especially in the field of small and medium-sized enterprises.

Based on the joint research goals concrete measures have been taken to lift the joint research on a new level. After an initial joint SME Workshop at Shandong Agricultural University in May 2016, in February 2017, the German Federal Ministry of Education and Research (BMBF) supported FOM to undertake a so called “travelling conference” to different universities in China including Shandong Agricultural University on “Industry 4.0 – Resource efficiency and digital transformation“. The 1.5-day conference in Tai’an underlined the huge potential for scientific cooperation in different scientific fields including small and medium-sized enterprises. In September 2017, FOM and SDAU held the “International Symposium on small- and medium-sized Enterprises in Germany and China – Similarities and Dissimilarities” funded by the Sino-German Center CDZ, a research funding institution founded as a joint venture by DFG and NSFC. After successfully holding the symposium in China, in March 2018, SDAU and FOM applied for a joint research project at NSFC and DFG on “Economic and ecological issues in cooperative and competitive relationships among enterprises in SME industry clusters of the Chinese and German food sector (CG Eco-op)”. Recently, a third joint conference was applied for at NSFC and DFG on sectoral issues of small and medium sized enterprises in China and Germany in December 2018.

This book is one tangible outcome of the conference in September 2017 similar to the publication of the 2016 conference papers and is dedicated to the successful cooperation and fruitful partnership between SDAU and FOM, which already lasts for 15 years and will be successfully continued in the future. We wish this excellent cooperation all the best.

Essen, July 2018

Prof. Dr. Burghard Hermeier
President FOM University
of Applied Sciences

Prof. Dr. Zhang Xiansheng
President Shandong
Agricultural University

Welcome Note

庆祝山东农业大学和 FOM 大学合作十五年，为本书写的序。

山东农业大学与德国埃森经济管理应用技术大学（简称 FOM 大学）的合作，自 2003 年伊始至今，已满十五载，迄今主要是在管理学与经济学的教学方面开展的联合项目。两所大学都希望扩大彼此在科研领域的合作，特别是在中小型企业领域的科研合作。

在科研合作目标的指引下，双方采取了有效措施，逐步提高联合研究的水平和层次。2016 年 5 月双方首次在泰安举办了中小企业联合研讨会。2017 年 2 月，德国联邦教育和研究部支持 FOM 大学在中国的多家高校（包括山东农业大学）举办了主题为“工业 4.0—资源效率和数字变革”的“移动会议”。其中，在泰安举行的 1.5 天的会议深入探讨了包括中小企业的困惑与对策在内的多个领域的科研合作的可行性。2017 年 9 月 16 日至 18 日，在国家自然科学基金中德科学中心的全额资助下，山东农业大学和 FOM 大学在泰安举办了“中德中小型企业国际研讨会——相似性与差异性”，会议获得圆满成功。中德双方的项目负责人于 2018 年 3 月，分别向中国国家自然科学基金会和德国研究协会（DFG）递交了题为“中国和德国食品产业集群内中小企业竞合关系中的经济和环境问题研究”的联合研究课题申请。目前，两校的研究者正在紧锣密鼓的申请并筹备于 2018 年 12 月在德国举办第三次中小企业部门问题联席会议，进一步扩大两校教学和科研合作的影响力。

这本书是 2017 年 9 月会议的一个具体成果的体现。我深信，在两校持续 15 年积累的教学合作经验的基础上，只要双方共同努力，必将会取得科研方面更大更高更多的成果。衷心祝你们合作愉快！

张宪省教授
山东农业大学 校长

Burghard Hermeier 教授
FOM 应用科学大学 校长

Preface

The development of an economy and macro-economic welfare depends on different factors and players. Important players in Germany as well as in China are small and medium-sized enterprises (SMEs). They are hugely contributing to employment, innovation, the production of goods and services and the generation of income (Rothgang and Dehio, 2016; Xu, 2016). Up to 95 percent of private companies in Germany are small and medium-sized family enterprises (Schalast and Barten, 2008). They form the backbone of the German economy. In the 500 largest family businesses (in terms of the number of employees) in Germany alone, 4.5 million people were employed worldwide in 2010. These 500 top-selling family-owned companies generated sales of nearly 900 billion euros in the same year (Gottschalk et al, 2011). Especially in the manufacturing sector, innovations are particularly important for their continued existence (Rothgang and Dehio, 2016). These can be product innovations, process innovations, economic / organizational innovations, etc. Without continuous innovation, business success is eroded by competition or replaced by alternative innovations. Systematic innovation management plays a key role in the company's growth (Warschat, 2013).

Entrepreneurial environment in Germany is known by a high number of financial and advisory services as well as a prosperous economic climate to encourage entrepreneurial actions. Nevertheless, Germany's entrepreneurial intensity is very low (Singer, Amoros, and Moska, 2015; Amoros and Bosma, 2014). Comparing the level of start-ups and liquidations, there has been a negative balance for the last four years (Meyer, 2015, Statistisches Bundesamt, 2013). This situation is even more peculiar due to the fact that only 60% of the allotted budget for grants to support entrepreneurial activities was used due to missing applications (Almus and Prantl, 2002, Bernhard, 2012, Bouncken, 2010). The influence of the factor "family business" on the ability to innovate is seen in the literature quite divergent. On the one hand, family business is certified a special entrepreneur spirit, which makes them particularly innovative (Hülsbeck et al, 2011). On the other hand, the lack of separation of property and control as well as inadequate (Zahra, 2005) assumes that the more generations of a family actively participate in the business, the greater the sense of innovation.

In China, SMEs are also a backbone of the economy. They are accounting for more than 60 percent of the country's gross domestic product and 80 percent of its job opportunities (UHI-News, 2017). As such their role in guaranteeing sustainable development and social equality through technological innovation (Xu, 2016) and exchange between business, politics and society is not to be underestimated (Zhao, 2016). Although they are challenged by weak linkages to external

markets and limited financing opportunities, it becomes more and more important to enhance the competitiveness of SMEs through efficient and professional government services. By comparing the perception of SMEs in China and Germany, they are obviously differences. In fact, the Chinese society is more in favour of big companies than Germany. Recent research also suggest that national culture has a significant moderating impact on the effect of certain antecedents to successful new product development activities: participative leadership is a more important driver of new product development activities in Germany than in China, while consideration and management emphasis affect new product development more in China than in Germany (Brettel et al, 2012). Against this background, there is a large scope for the discussion of issues related to SMEs in Germany and China in terms of co-operations, opportunities, challenges and perspectives.

Against this background, this book discusses these issues and is outcome of the international symposium "Small- and medium-sized enterprises in Germany and China – Similarities and Dissimilarities", held at Shandong Agricultural University in Tai'an (Shandong Province) between 16-18 September 2017. Researchers from Germany and China intensively discussed various important issues of SMEs in China and Germany aiming at analyzing and at the end of the symposium deducting similarities and dissimilarities of framework conditions such as regulations and policies, impacts on the macro-economy, innovation capacities, state of entrepreneurship, risk management and other micro-economic features of small and medium sized economies in China and Germany.

The book is divided into two parts. Part 1 discusses framework conditions for SMEs with papers by Markus Göbel, Feng Lin and Li Weibang, Andreas Merbecks and Jörg Freiling, and provides for macro-economic analysis with contributions by Andree Elsner and Annika Elsner as well as Andreas Oberheitmann. Part 2 provides for sectoral analysis with papers by Xu Xuanguo and Chang Yu, Marcel Seidel, Huo Ming, Zhou Yuxi, Chai Jing and Zhang Fuhong, Hartmut-Heinrich Meyer, Huo Ming, Yang Liu, Chai Jing and Zhang Liang, Maria Jade C. Opolencia and Akinola O.Fadahunsi as well as Ge Yongbo, Zhao Guoqing and Wang Hongzhe.

Main results of the symposium were the following conclusions: (a) There are much more similarities between German and Chinese small and medium-sized enterprises than dissimilarities. This is due to the fact that company size itself seems to determine specific economic opportunities and challenges much more than regional differences in input factor endowment and other economic framework conditions. (b) Similarities of Chinese and German small and medium-sized enterprises such as the significant macro-economic contribution to employment,

innovation, the production of goods and services, the generation of income, prevalence of family business and more intensive relations to the economy in its regional vicinity compared to large-size enterprises are more obvious than dissimilarities of SMEs in the two countries. (c) Dissimilarities between German and Chinese small and medium sized enterprises are more related to regional differences in input factor endowment and other economic framework conditions such as economic development. E.g., German SMEs may have smaller difficulties to cope with the opportunities and challenges of digitalization as their financial condition on the average is better than Chinese SMEs. However, especially young start-up enterprises in China may be less reluctant to implement “Made in China 2025” than German counterparts implementing “Industry 4.0”. Chinese SMEs are much less taking environmental considerations such as local pollution, low carbon footprint including short distances of traded goods into account.

In order to have a higher degree of perception of these topics internationally, all papers in this publication are provided in an English and a Chinese version.

July 2018

Andreas Oberheitmann, Andree Elsner, Chen Shengwei, Xu Xuanguo

前言

经济发展和宏观经济福利取决于不同的因素和参与者。德国和中国的重要参与者都是中小企业（SME）。它们对就业、创新、商品和服务的生产以及收入的创造做出了巨大贡献（Rothgang and Dehio, 2016; Xu, 2016）。在德国，高达95%的私营公司是中小型家族企业（Schalast and Barten, 2008）。它们构成了德国经济的支柱。仅在德国就500家最大的家族企业（就员工数量而言），2010年全球雇佣了450万人。这500家最大的家族企业在同一年创造了近9000亿欧元的销售额（Gottschalk 等人, 2011）。特别是在制造业领域，创新对于他们的持续存在尤为重要（Rothgang and Dehio, 2016）。这些可以是产品创新，流程创新，经济/组织创新等。如果没有持续创新，企业的成功就会被竞争所侵蚀，或被替代性创新所取代。系统的创新管理在公司发展中起着关键作用（Warschat, 2013）。

德国的创业环境以众多的金融和咨询服务以及繁荣的经济环境而闻名，以鼓励企业家采取行动。尽管如此，德国的创业强度非常低（Singer, Amoros 和 Moska, 2015; Amoros 和 Bosma, 2014）。比较初创和清算水平，过去四年出现负值（Meyer, 2015, Statistisches Bundesamt, 2013）。这种情况更加奇怪，因为只有60%的拨款用于支持创业活动，因缺失申请而被使用（Almus and Prantl, 2002, Bernhard, 2012, Bouncken, 2010）。“家族企业”这个因素对创新能力的影响在文献中很不相同。一方面，家族企业被证明是一种特殊的企业家精神，这使他们特别具有创新性（Hulsbecket al, 2011）。另一方面，财产和控制权分离的不足（Zahra, 2005）假设，一个家庭越积极参与商业活动，创新意识就越强。

在中国，中小企业也是经济的支柱。他们占国内生产总值的60%以上和就业机会的80%（UHI-News, 2017）。因此，他们通过技术创新保证可持续发展和社会平等的作用（Xu, 2016），以及商业、政治和社会之间的交流不容低估（Zhao, 2016）。虽然他们受到与外部市场联系薄弱和融资机会有限的挑战，但通过高效和专业的政府服务来提高中小企业的竞争力变得越来越重要。通过比较中国和德国中小企业的看法，他们存在明显的差异。事实上，中国社会比德国人更倾向于大公司。最近的研究还表明，民族文化对某些先行者对成功的新产品开发活动的影响有显著的缓和影响：相比中国而言，参与式领导力是德国新产品开发活动的一个更重要的推动力；而相比德国，考量和管理强调则会更加影响中国的新产品开发（Brettel et al, 2012）。在这样的背景下，德国和中国的中小企业在合作、机遇、挑战和观点等方面有很大的讨论空间。

在这个背景下，本书讨论了这些问题，讨论成果均来自于 2017 年 9 月 18 日在山东泰安山东农业大学举办的“德-中两国中小企业 - 异同”国际研讨会中。会上，德国和中国的研究人员围绕中国和德国的中小企业的各种重要问题进行了深入探讨，旨在分析以及在会后减少对于框架条件的相似性和不同点，如法规和政策，对宏观经济的影响，创新能力，创业状况，风险管理以及中国和德国中小经济体的其他微观经济特征。

本书分为两部分。第 1 部分通过 Markus Göbel, 冯林 和 李维邦, Andreas Merbecks 和 Jörg Freiling 的论文讨论了中小企业的框架条件，并涵盖了 Andree Elsner 和 Annika Elsner 以及 Andreas Oberheitmann 的宏观经济分析。第二部分重点在于部门分析，收录了徐宣国 和于唱, Marcel Seidel, 霍明, 周玉玺, 柴婧 和张复宏, Hartmut-Heinrich Meyer, 霍明, 杨柳, 柴婧 和 张亮, Maria Jade C. Opulencia 和 Akinola O. Fadahunsi 以及葛永波, 赵国庆 和 王鸿哲的文章。

研讨会的主要结果如下：（1）德国和中国中小企业之间的相似性比不同之处大得多。这是由于公司规模本身似乎决定了具体的经济机遇和挑战，而不是投入要素禀赋和其他经济框架条件的区域差异。（2）中国和德国中小企业的相似之处，例如对就业，创新，商品和服务的生产，收入的产生，家族企业的流行以及与经济的密切关系等重要的宏观经济贡献在其区域附近与大型企业相比，两国中小企业的差异性更为明显。（3）德中两国中小企业的差异与投入要素禀赋和经济发展等其他经济框架条件的区域差异更为相关。例如，德国中小企业在应对数字化带来的机遇和挑战方面遇到的困难较小，因为它们的财务状况平均好于中国中小企业。但是特别地，相比于德国同行对于实施“工业 4.0”的态度，中国的年轻创业企业可能不太愿意实施“中国制造 2025”。中国中小企业更少考虑环境问题，如当地污染，低碳足迹（包括贸易货物距离短）。

为了在国际上对这些主题有更高的认知度，本出版物中的所有论文均以英文和中文版本提供。

2018 年 7 月

Andreas Oberheitmann, Andree Elsner, Chen Shengwei, Xu Xuanguo

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Part 1 Framework conditions and macro-economic analysis

A Ideologies of Organizing – an empirical analysis of socio-cultural boundaries in the inter-organizational knowledge-transfer

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Abstract

In order for companies to be innovative, knowledge transfer across organizational boundaries is necessary in most cases. However, this transfer is not trivial but must overcome differing organizational cultures and ideologies. Against this background, this study examines how interorganizational knowledge transfer works same as the difficulties within that transfer. Based on a socialconstructivist notion of knowledge and neo-institutional organization theories the socio-cultural dimension of interorganizational knowledge transfer is focused. We investigate the knowledge transfer within a corporate venture capital triade in an explorative study with a multiple case design. The varying organizational life-worlds lead to incommensurable modes of perceptions and comprehension problems.

Key words:

Interorganizational knowledge transfer, case studies, corporate venture capital, life-worlds, neo-institutionalism

1 Introduction

Dorothy Leonard's (1995) statement that most innovation happens at the boundaries between disciplines or specializations tells us that working across boundaries is a key ingredient of competitive advantage, but also why innovation proves so difficult to create and maintain. The growing research on knowledge in organizations underscores this challenge by recognizing first the "knowledge boundaries" (Brown and Duguid 1998) between specialized domains and second that knowledge is "both a source of and a barrier to innovation" (Carlile 2002, 442).

In this paper, we will examine the issue of boundaries in organization theory, based on theoretical insights of social constructivism. We will look at how knowledge is transferred across boundaries as well as how new knowledge is generated in settings where innovation is desired. Innovation, in this case, can be created both internally and externally. Both ways imply to go beyond existing boundaries, which can be of intra-organizational (internal) and of inter-organizational nature (external). Since organizations often do not possess the knowledge required to produce innovations and are limited in their ability to produce knowledge purely through internal R&D investments (Wadhwa and Kotha 2006), consequently, to accumulate the necessary knowledge, many organizations turn to external activities such as alliances, joint ventures, mergers and acquisitions and corporate venture capital investments (Schild, Maula and Keil 2005) where crossing interorganizational boundaries is a sensible issue. In this study, we examine the knowledge transfer in the corporate venture capital (CVC) triade of CVC investments, one mode of innovation management. This CVC triade consists of the CVC-unit of the incumbent, which is investing, the business units of the incumbent, which are strategically involved, as well as the new venture in which the money is invested. In this constellation, we deal at least with two organizational cultures/ideologies, most probably various subcultures and occupational communities, and respectively with several boundaries, including intra-organizational and interorganizational ones. Accordingly, our generic research question, thus being irrespective of the research object, is:

- (1) How are knowledge and resources in an interorganizational set-up with divergent ideologies exchanged beyond intra- and interorganizational boundaries, and
- (2) what kind of difficulties might become evident?

Our research contribution is as follows: we propose to link neo-institutional organization theories with sociology of knowledge. In this context, we focus on the socialconstructivistic notion of knowledge on the one hand, and emphasize the socio-cultural dimension of the interorganizational knowledge transfer on the other hand.

2 Previous research and theoretical foundations

In their work about the emergence and the operationalization of knowledge-sharing networks and interorganizational network-learning Dyer and Nobeoka (2000) argue that „there is little empirical research to date” and “further progress is critically dependent upon closer observation of the processes through which tacit knowledge is transferred” (p. 346). Similar to the empirical research on interorganizational knowledge transfer and generation the theoretical analysis of this issue is in its early stages. Certainly, we have witnessed a considerable number of publications in that particular research field, such as the Relational View from Dyer and Singh (1998), the concept of reciprocal interfirm learning (Lubatkin et al. 2001), or the contribution of Larsson et al. (1998) about the dilemma of interorganizational learning. However, questions concerning the socio-cultural dimension of the knowledge transfer and the resulting diverging ideologies and barriers are more or less unaffected. Schultze and Stabell (2004) relate these approaches to the “neo-functionalist discourse” as opposed to the “constructivistic discourse” in which knowledge is constructed through social processes of interaction. Thus, to understand and frame knowledge, it has to be seen in respect of concrete social practices. At present, numerous studies show that different subcultures on the intraorganizational level (Schein 1996), occupational communities (Bechky 2003) or communities of practices (Gherardi and Nicolini 2002) have shaped socio-cultural boundaries and thus, hindered knowledge to be transferred (Bechky 2003). However, although a socialconstructivistic discourse on socio-cultural barriers / conditions in the interorganizational knowledge transfer seems to be sensible given the variety of “Lebenswelten” (Schütz 1971) we face, an empiric discussion with this subject is absent. Consequently, the purpose of our contribution is to somewhat close this research gap under reference to socialconstructivistic and neo-institutionalistic theories.

Theoretical foundations – Knowledge and Institutions

Knowledge always originates in the social interaction with other participants and reflects the experienced (inter) subjective reality (Berger and Luckmann 1977). The creation of knowledge can be grasped therefore only as a very specifically situational activity which runs off according to context specific rules of meaning allocation and sense constitution. Communities that constitute themselves that way perceive their environment according to their system of cognitive rules. Thus, the socially constructed knowledge re-affects the actors insofar as it adjusts their behavior in the everyday world (Alltagswelt) (Berger and Luckmann 1977, 21). This behavior-adjusting knowledge appears in form of classifications, routines, roles and institutions in the everyday world. As a result, the legitimate idea that

has evolved in an organization of what knowledge ought to be, by which logics it could be transferred, and, respectively, which instruments, procedures or routines seem to be appropriate, is strictly orientated towards the dominant institutions of an overall social context (e.g., industries, professions, organizational units) on the one hand. On the other, researchers have argued that “organizational structure and practice do not carry institutional meanings in themselves and by themselves” (Zilber 2002, 236; Friedland and Alford 1991). These are always the people who ascribe, in their interactions, institutional meaning to organizational structures and routines.

An analysis of organizational practices refers less to the concrete knowledge contents represented by the participants in detail. Rather, it corresponds to the institutionalized patterns of sense that underlie this knowledge and form the basis for what then may become knowledge content. In Schütz (1971) terminology a life-world (*Lebenswelt*) is understood as non-reflected signification of everyday life. Life-worlds set up socio-cultural boundaries in which reciprocal interactions correspond with each other in a sensible way. *Lebensweltliche* orientations are therefore susceptible to ideologies, this is the stabilisation of given social and political orders via limitations of reflection which are self-imposed or externally imposed (Berger and Luckmann 1977). These boundaries are specific to the system and, with subject to the degree of institutionalization, can become so manifest that a linear knowledge transfer between organizations is impossible. “Thought worlds with different funds of knowledge and systems of meaning cannot easily share ideas, and may view one another’s central issues as esoteric, if not meaningless” (Boland and Tenkasi 1995, 351).

3 Research method and data set

The research object of this explorative study is the CVC-Corporation-portfolio company (PC) triad. We use qualitative research methods and, accordingly, base our investigation on interpretative analysis of qualitative data. The approach to our research object was based on (1) a sound theoretical previous knowledge and (2) participative observations. The present study builds on a Multiple Case Design in which the cases to be analyzed were selected by the replication logic.

As is appropriate in qualitative research, “theory-based” samplings as well as overlapping data collection and analyses were used (Glaser and Strauss 1979). Seven exploratory case studies of German corporate venture capital activity, investigated from 2002, were based on document analysis and, particularly, on 32 narrative, guideline-supported interviews. In the first step, the seven cases – in terms of triads – were analyzed one by one, after that they were brought together in a comparative case analysis, and finally categorized. Interview data were ‘triangulated’ by including the additional perspectives of CEOs, business units, and company founders. We analyzed the data from the triads using specialist qualitative-quantitative analysing software, which allowed us to sort, codify and categorize the data in order to explore the differing ideologies and power constellations of the parties in the process of knowledge transfer and generation in inter-organizational relationships.

We coded the interview transcripts using constant comparative analysis in which each incident was assigned to an emergent, open coding scheme (Strauss and Corbin 1990). We jointly produced 39 codes and subsequently reduced these into increasingly abstract or generic categories through axial coding. This stage of analysis produced 14 categories. In a process of selective coding, we further collapsed and reappraised the classifications to yield finally the three main categories presented in our paper: (1) organizational life-worlds (Lebenswelten) (2) reciprocal perceptions and (3) knowledge transfer and generation. The process of the continuous comparative method used in this study includes internal validity checks of the data (Kirk and Miller, 1986).

4 Results

In this part, we will not explicitly focus on the organizational characteristics as such. Rather, we like to point to the resultant cultural-symbolic reasons for the reciprocal interpretations and perceptions with which the actors consider the behaviour, the structures, and processes of the opponent. We show (1) the diverging life-worlds and ideologies of portfolio companies on the one hand, and industrial firms on the other. Here, we specifically address the firms' self-cognition, the understanding of their responsibilities and their knowledge. Then we indicate (2) the reciprocal perception of the participants regarding their opponents as well as their understanding of interaction derived from it. Finally, we describe (3) knowledge transfer and generation between the participants.

4.1 Organizational life-worlds / Social settings

Portfolio companies

The practitioners in our research field predominantly have a scientific-technical background, which means that their job specific attitudes and perspectives play an important role for their dominant logic. According to their scientific socialization, organization members particularly consider those forms of interaction to be well suited that reflect openness, willingness to co-operate, reciprocity norms and informal communication. The internal knowledge exchange develops primarily during an atmosphere based on discussion and working, in which open ideas and concepts are circulating. Knowledge, therefore, appears to be a quasi public good all organization members are able to access and contribute to. The individual motivation to exchange knowledge is not due to self-interests; rather it is the concern over the community. This is because the feeling of a morally mutual commitment outweighs the prospect of an individual gain. Hence, cooperation is the fundamental idea of the concept of knowledge management or the norm to be established, respectively. This familial social structure is supported and controlled by reciprocal trust, respect and empathy; a sort of social integration that Wilkins and Ouchi (1983) call clan culture. Recurring to a common professional socialization, a homogeneous value and target system is generated that permits start-ups to become socio-culturally highly integrated organizations. Far reaching decision-making does not necessarily follow rational criteria, but – just as usual in the institutional family setting – emotions determine decisions. United by a time-

and emotionally intensive work context, the actors with scientific-technical background are intrinsically motivated to focus on innovative problem solving. Customers, marketing strategies or even a professional public image of the organization are finally considered to be less relevant to the actual task. Accordingly, actors mostly being the founders of the New Venture are less interested in assuming managerial functions. Also, most actors lack a comprehensive management know-how and competencies.

This unidirectional focus on innovation and technological development is frequently fortified by the environment. Especially during the peak of the New Economy, “when the New Economy was considered to be the future topic” (PC), institutional players from politics, media and associations supported the idea of innovativeness and Germany as a location for innovation in order to maintain the positive climate within the society and on the markets. In particular, technological innovations were pushed by the media, firms were sponsored with additional financial bonus, and founders were stylized as the technological and entrepreneurial avant-garde. At that time, New Ventures and their founders did not sell products or services only but also they sold themselves as pioneers of a “new” ideology of organizing and innovating that inspired the economy and society during the turn of the millennium. “The New Economy was about demarcation. We are new, we are different, we are good, we are better. Everything old is bad” (CVC).

Industrial firms

An antipode of this new ideology of organizing is the classical corporate structure and culture. Corporate culture is primarily shaped by the institutional a priori of a formalized large organization as described by Max Weber as the “iron cage” of bureaucracy. According to their bureaucratic functional logic, corporations strongly need a thorough planning and a specific constitution of the organizational structure in order to generate and implement even “brilliant” ideas. This “innovation bureaucracy” is characterized by room for creativity on the one hand, and by discipline and strict control of time, use of resources, and product quality – often contractually guaranteed – on the other. Those contracts are formalized according to the respective task and context, specified with measurable targets and continuously monitored. Hence, to come up with complex innovations in a large formalized organization it is essential to have both the required resources with specialized know-how in particular, and the active involvement of many individuals whose activities, if necessary, have to be coordinated with respect to time and content, supported, guided and monitored.

It is this knowledge around executive culture (Schein 1996) with its work routines, functional logics and decision-making processes which enable the members of multinational corporations to integrate their abilities and professional know-how into the organizational context. It is especially important in “innovation bureaucracies” to have experience-based knowledge of how to adequately deal with formalized rules and routines. These formalized procedures including contracts, bonus programs, suggestion schemes, data bases and incentive systems form the institutional setting of intraorganizational knowledge transfer – and generation.

From our data set we found out that often so-called knowledge communities or “occupational communities” (Bechky 2003) act as social reference points of these interaction processes. They are located at the business unit level and form, with respect to context and technological input, local knowledge bases whose local character considerably hampers a documentation of the emerged knowledge as well as a later transfer. The self-image and the social identity of such “occupational communities” are mostly characterized by a pre-organizational socialization in form of job specific routines and, driven by profession, lead to specific performance standards and working ethics (Schein 1985). Consequently, the community-specific rule systems and relevance structures (Schütz 1971) can hardly be modified on the organizational level and, sometimes, run contrary to the institutional a priori of an “innovation bureaucracy”. To realize an efficient cooperation it is important for the CVC-units to be able to access the sociality of the business units. This socio-cultural connection with the life-world (Lebenswelt) of the BUs is particularly important with regard to questions of how to finance the portfolio companies, and how to realize synergetic effects. Thus, successful knowledge generation and transfer require an emphatic consideration and handling of all relevant occupational communities without neglecting the institutional a priori of a formalized knowledge management.

4.2 The reciprocal perception of portfolio firms and industrial corporations

The portfolio companies’ perception of the industrial firms

Due to their entirely varying ideologies of organizing portfolio firms distance themselves from their opponents. They consider the opponents’ rational decision making and procedures as “little transparent and sometimes even beyond their understanding” (PC). The visible results of that management culture, like hierarchical integration, dominance of control mechanisms and a contract-related interaction mode, confirm start-ups in their view upon industrial firms as formalized

bureaucracies. Since a considerable amount of resources is used for risk avoidance strategies – i.e. to reinsure political processes within the organization – familial oriented portfolio firms often consider large corporations to be paranoid. By interpreting institutionalized management procedures as examples of over-bureaucratizing and waste of resources, young entrepreneurs do not see any necessity to professionalize their organizational structure and management. In particular, firms which consider themselves as technological pioneers would primarily establish an interorganizational relationship for financial and reputation reasons, as well as to benefit from production capacities of the (larger) corporation. In their view, it merely takes an adequate infrastructure to make an innovative technology become a success story. They argue further that their provision of tasks only leads to problems if the CVC managers do not understand the technology or the business model and, due to their ignorance, confront the PCs with unfair requirements. In addition, following their argument, requirements of formalized control technologies – such as the implementation of mile stones, controlling instruments, reporting mechanisms – endanger the entrepreneurial spirit and are even considered an illegitimate attack on the independence of the enterprise.

The industrial firms' perception of the portfolio companies

Because of their socialization in terms of an executive culture (Schein 1996) industrial firms consider the competence and professionalism of the portfolio firms' top management as a key success factor. They are only interested in innovative technologies as far as they are convertible into a scalable business model. From the CVC-Unit's point of view, however, this is only provided by a change in the organizational and managerial logic of the portfolio firm. Start-ups or research-laboratories with their rather familial orientated social structure have to be replaced by a professionalized firm that adapts to the institutional requirements of the market. This includes the adoption of current control technologies, the implementation of quantifiable forms of communication, and the recruitment of an external and professionalized management. Taken as a necessary fact, this institutional reorientation strongly assumes a change in the portfolio firm's logic which forms the basis for an agreement. Only if the key protagonists change their way of perception up to a rather marketing focused way of looking at themselves and their environment, an institutional process of change and learning can unfold. Unfortunately, as indicated by the CVCs, the founders' cognitive flexibility remains questionable. This is especially due to their self-perception as head of a laboratory rather than a CEO and the fact that they adapt their behavior to corresponding institutional expectations. Interestingly, while the New Ventures' way of working and acting is considered as unprofessional and not close to the market,

the representatives of the BUs still feel attacked by the dynamics of innovation of the portfolio firms. New Ventures are even perceived as a threat to the own position in the company that has to be combated with all possible means.

Consequences of incommensurable modes of perception

The existing differences regarding the reciprocal self-perception and the external appearance (*Fremdwahrnehmung*) of the participants often result in fatal consequences for the interorganizational process of communication. Because of the varying institutionalized life-worlds (*Lebenswelten*), a reciprocal empathy which allows the actors to understand the interests, feelings and expectations of the opponent, is not very likely to happen. Rather, reciprocal 'sense abandonment' governs the process of communication so that an interorganizational knowledge generation or transfer does not happen, or cannot happen, respectively. One can rather observe a fiction of a reciprocal perception, as it is well described by Schütz (1971) with his concept of the "reciprocity of perspectives". Since the participants simply do not know the opponent's codes of language, meanings, motives and interests, they primarily refer to already existing institutionalized roles of behaviour, that are typical for the respective industry, to build reciprocal expectations. Following the given roles – industry manager and entrepreneurs – they finally assume a motivation that is orientated towards the primacy of maximizing personal benefit (Weber and Göbel 2006).

As both parties do not know each other they probably retain relevant know-how from the other, distrust each other and evaluate risks higher than the opportunities promised by an interorganizational relationship. In the worst case the reciprocal misunderstanding and the resulting distrust is so powerful that the relationship erodes, the flow of resources is reduced and the portfolio firm risks bankruptcy. The fatal self-dynamic of reciprocal categorizing becomes evident, as pointed out by Schütz (1971). However, in the first place, the fiction of a reciprocal adoption of perspectives due to institutional boundaries allows for the development of basic communicative abilities between the founder of a company and the industry manager. From an interorganizational perspective this permanent reorientation on institutionalized roles leads to a reproduction and manifestation of ideological pre-formed perception schemes. As a result, this self-referential process does not only confirm existing negative prejudices, but also results in the fatal feeling of understanding the other without doing it properly, and thus, missing the other's real message.

5 Discussion and Conclusion

The objective of our article is to elaborate how interorganizational knowledge and resource transfer with divergent ideologies works, beyond intra- and interorganizational boundaries, and which difficulties become evident.

We thereby focus on the constructivist discourse (Schultze and Stabell 2004, 555), where knowledge does not describe an entity without the necessity of an observer, but exclusively constitutes and reaches persistence in the interaction, i.e. in interdependent dedication and validation processes. "Knowledge is continuously shaping and being shaped by the social practices of individuals in communities. Thus knowledge is both the outcome of situated action as well as the input to it" (p. 558). The social-constructivist approaches to knowledge transfer, prevalent in academic literature, lack a social-theoretic embedding so far (Boland and Tenkasi 1995; Brown and Duguid 1991, 1998, 2001). While we combine in our article the social-constructivist sociology of knowledge with the neo-institutionalistic organization theory, we can empirically show the relevance of a socio-cultural context for the formation of meaning, as well as emphasize the importance of social dimensions for the transfer and generation of knowledge.

We have shown that with regard to socio-cultural institutions various ideologies can emerge, which amongst others decisively affect the perceptions of the participants, what knowledge is about and how it can be dealt with. These ideological differences do not only lead to reciprocal perception and comprehension difficulties, but also result in subtle interest conflicts or even open power struggles. As a consequence, new knowledge does not only have to be translated, but also transformed and shaped in a way that it is politically accessible in complex negotiation processes.

Ultimately, the results of our latest research provide a fruitful contribution to empirically back up institutionalistic theories as in particular the "translation concept" of the Scandinavian institutionalism (Czarniawska and Joerges 1996), which attempts to systematically capture the "transformatory" moment of knowledge integration.

Whilst our article focuses primarily on the translation of innovations and schemes of meaning, the Scandinavian institutionalism points out that in the process of translation not only the translated idea is subject to change, but also the respectively participating systems of meaning (Czarniawska and Joerges 1996). In our case it is the triad made up of the CVC-Unit, the portfolio company and the business units. A detailed empirical analysis, which focuses on the modification of these participating systems, is still to be claimed and could be subject for further research.

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Part 1 Framework conditions and macro-economic analysis

B Government Intervention, Spatial Spillover and County Financial Development — Based on Empirical Evidence of SDM Model of 1895 Chinese Counties

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Abstract

The article takes empirical test from spatial association aspect on spatial association effects of county finance development and spatial spillover effect that government intervention did on county financial development by building Static and Dynamic Spatial Panel Durbin Model, using panel data of 1895 Chinese counties from 2002 to 2014. The result shows that county financial development has spatial association effect, counties adjacent geographically have similar level of financial development, and the improvement of level of financial development can promote peripheral counties' level of financial development. In perspective of spatial association, government intervention has spatial spillover effect on county financial development. While government intervention has positive spatial spillover effect on its own county, the competition among governments caused by fiscal decentralization makes negative spatial spillover effect on other counties. The conclusion could provide beneficial reference for criticizing the effects of local governments' financial policies, improving the coordination of local governments' financial policies, and prompting benign interaction of financial development among regions.

Key words: Government Intervention, Spatial Spillover, Financial Development, County Finance

1 Introduction

Government intervention in the process of China's economic transition is an important driving force for regional financial development. On the one hand, the government plays a role in remedying market shortages and enhancing market functions. [1] On the other hand, regional economic growth requires support from the financial system, and in the context of fiscal decentralization, the competition among local governments for growth has the incentive to directly or indirectly intervene in the use of funds by financial institutions in the region, and local financial development shows the typical characteristics of the interaction and influence of the forces of local government intervention and marketization. [2] In order to boost the development of county economy, county-level local governments in China have initiated interventions in local financial markets and the flow of financial resources in all directions and in multiple channels, such as the promotion of property right systems for the granting of rural land and forest land contracted rights; strengthen credit system construction, establish credit management system, combat malicious debt escaping bank debts, invest in setting up "guarantee company", "guarantee fund" and "assurance premium" in government context to increase the government's credit enhancement; introduce joint-stock banks and city commercial banks, promote the restructuring of local city commercial banks and rural commercial banks, increase the establishment of local financial institutions and local financial organizations such as village and town banks and micro-finance companies, guide financial institutions to innovate service models, improve service levels, etc. The policy is devoted to the improvement of the market system and can be called an "enterprising policy." At the same time, local county-level local governments have generally issued policy documents such as the "Measures and Awards for Financial Institutions," and "Measures and Awards for Enterprise Listing Fulfillment," setting up branches, increasing credit availability, writing off bad debts, and listing companies in the local financial institutions. Financing and other behaviors are assessed, and financial institutions, listed companies are provided with financial deposits, tax deductions, fee subsidies, and taxation relief (refunds) for senior management of financial institutions, senior talent subsidies, and cash awards. Improve the enthusiasm of financial institutions for credit supply and enterprises' use of capital market financing. Since such policies are mainly aimed at avoiding the outflow of local financial resources and attracting inflows of financial resources from outside, they can be called "protective policies."

With regard to the role of government intervention in financial development, the existing research is mainly based on a spatially independent perspective and

forms two main ideas: The first view is that government intervention can help improve the level of financial development. Because the system of developing countries is incomplete, it is necessary to reduce information asymmetry through government intervention to make up for market failures. [3] Gu Shen et al. found that local governments will use various preferential policies to actively introduce financial institutions and actively create conditions for the creation of additional local financial institutions to mobilize more funds to support the local economy. [4] Xu Jianbo and others believe that government intervention policies as the external institutional environment of financial institutions can affect the benefits and costs of loans through "anticipated effects" and "cost effects", which will have a significant impact on the effectiveness of financial institutions, and government intervention can be effective, which changes the risk expectations and operating costs of financial institutions and eases financial discrimination so that more economies receive financial support[5]. The second view is that government intervention is not conducive to improving the level of financial development, because excessive intervention by the governments of developing countries in the financial system and financial activities has inhibited the normal development of the financial system. For example, Cui Guangqing pointed out that under the influence of government intervention, there is a clear "quantitative expansion" and "deficient qualitative development" situation in China's regional financial development. [6] Yao Yaojun and Yin Xiguo pointed out that under the heavy financial burden, local governments have stepped up their intervention in financial credit behavior, which will inevitably lead to inefficient allocation of financial credit funds. [7]-[8] Pi Tianlei and others believe that local government intervention has a negative effect on regional financial development and has a "crowding-out effect" and "substitution effect" on the role of the rule of law in promoting financial development. [9] The above research combined with China's financial reform practice explained the dual role of government intervention in financial development, but the common limitation is to treat the region as an independent individual to observe the impact of government intervention on financial development, ignoring the spatial spillover effects of interventions by government from the perspective of spatial correlation.

From the perspective of spatial correlation, there is a spatial spillover effect of government intervention, which not only has an impact on the financial development of the region, but also has an impact on the financial development of other regions. The "enterprising policy" not only helps to improve the level of county financial development, but also the learning and cooperation of policies between counties that can improve the financial development level of both sides. Therefore, such policies have a positive spatial spillover effect on financial development

in other regions. Although the "protection policy" can also improve the county's level of financial development, such policies do not focus on the improvement of financial markets and collaboration among local governments, but on the struggle for existing financial resources and even trigger local governments. The "Race to the Bottom" around financial resources, so such policies have a negative spatial spillover effect on the financial development of other regions. Obviously, when examining the impact of government intervention on financial development, it is necessary not only to consider its impact on the county, but also to ignore its possible spatial spillover effect. Moreover, the existence of government competition factors may also result in diametrically opposite spillover effects of government intervention on the financial development of the county and other counties. What impact does government intervention have on county financial development? Does its influence on the financial development of the county and other counties exist and what are the differences? Therefore, based on the perspective of spatial correlation, this paper uses the panel data of 1,895 counties (cities) from 2002 to 2014 to build the static and dynamic SDM model, and empirically examines the spatial correlation effect of county financial development, with the help of government intervention. The effect reveals the different effects of government intervention on financial development within the county and between counties. On this basis, it proposes measures to optimize local government financial policies and improve the coordination of regional financial development.

2 Theoretical analysis and research hypothesis

Spatial correlation means that observations at different locations are spatially non-independent, thus presenting a non-random spatial pattern, that is, consistency between observations and locations. The current economic links between regions have also been confirmed by a large number of documents[10]-[11].

This paper argues that county-level financial development also has a spatial correlation effect. There are at least two channels for the formation of its associated effects: First, economic linkages. The improvement of a county's economic development level will drive the development of other county economies through factor flow, knowledge and technology spillovers and other means, which in turn will drive the development of financial development in other counties. Second, cooperation and competition, that is, cooperation between counties is based on the construction of local financial markets, the improvement of the property rights system, or the optimization of the credit environment. Either learning from each other's successful experience or competing with each other on financial resources will increase the spatial correlation of county-level financial development. In addition, the above-mentioned associated paths are closely related to the spatial relationship between the counties, geographically similar or similar counties, more similar resource and environmental endowments, more convenient flow of elements, closer ties between governments, smoother information transmission, and their financial development. The level of correlation is therefore also stronger. Based on the above analysis, this article will first verify the following hypothesis:

H1: There are spatial correlation effects on the level of financial development in geographically adjacent or similar counties.

The theory of fiscal decentralization holds that there are spillover effects on government actions such as fiscal revenues and expenditures. The expansion of fiscal spending in one place will lead to follow-up of expenditures in other regions, that is, "demonstrate effects"; the public goods and services formed by local fiscal expenditures will benefit other regions, namely "contact effect". Cooperation and moderate competition between local governments will lead to a positive spatial spillover of government actions, but if there is excessive competition among local governments, it will lead to a negative spatial spillover of government actions. Since the implementation of fiscal decentralization in China since the reform and opening up, local governments have become a political organization with independent economic interests aiming at maximizing economic benefits, which has led to "horizontal competition" among local governments.[12]-[13] The cadre appraisal mechanism with economic growth as the goal makes local governments

and their officials face the dual pressure of economic development and political promotion at the same time. [14] Competitive pressure forces local governments to seek to attract the flow of liquidity, especially financial resources, to the market to promote local economic growth. [15]

Under the pressure of competition, the intervention policy of local governments will first consider the improvement of the financial development level in the region. However, research results on government competition show that local government competition often leads to game results that are detrimental to the coordinated development of the region. For example, Xie Wei and others examined the game of interest among local governments in the implementation of public policies in China, arguing that local governments are pursuing regions. The competition for maximizing profits has led to the “tragedy of the commons”. [16] In the competition surrounding financial resources, local governments and their main officials are pursuing the maximization of short-term policy effects due to the pressure of economic development and political promotion, and in order to achieve a rapid increase in the level of financial development in the region. It tends to adopt a “protective policy”, thus creating a negative spatial spillover to other regions. Based on this, this paper proposes the following two hypotheses:

H2: There is a spatial spillover effect of government intervention on the development of county finance. There is a positive spatial spillover of financial development in this county.

H3: There is a spatial spillover effect of government intervention on county financial development, and there is a negative spatial spillover for financial development in other counties.

3 Research Design

3.1 Spatial correlation test

Before establishing a spatial econometric model, it is first necessary to determine whether there is a spatial correlation in the county-level financial development level of the explanatory variable. If there is a spatial correlation in the county-level financial development level, a corresponding spatial econometric model needs to be introduced for analysis. The spatial correlation test is mainly completed with the help of the spatial autocorrelation index Moran's I. The calculation formula for this statistic is as follows:

$$\text{Moran's } I = \frac{\sum_{i=1}^n \sum_{j=1}^n W_{ij} (Y_i - \bar{Y})(Y_j - \bar{Y})}{S^2 \sum_{i=1}^n \sum_{j=1}^n W_{ij}} \quad (1)$$

$$S^2 = \frac{1}{n} \sum_{j=1}^n (Y_j - \bar{Y})^2, \quad \bar{Y} = \frac{1}{n} \sum_{j=1}^n Y_j, \quad Y_i \text{ represents the financial development level of}$$

the i -th county. W_{ij} is an $n \times n$ order spatial weight matrix, which reflects the spatial relationship among different counties. n is the total number of county samples. The greater the absolute value of the Moran's I index, the stronger the spatial correlation of the county's financial development level, and the weaker the contrary.

3.2 Spatial Econometric Modeling

The spatial Durbin model considers the spatial spillover effect of the explanatory variables and explanatory variables at the same time. It can not only measure the spatial spillover effect of county financial development, but also reveal the spatial spillover effect of government intervention through the spatial lag of government intervention variables and a series of control variables. The Spatial Panel Durbin Model (SPDM) constructed in this paper is shown in equations (2) and (3).

$$y_{it} = \alpha + \rho \sum_{j=1}^n W_{ij} y_{jt} + X_{it} \beta + \theta \sum_{j=1}^n W_{ij} X_{jt} + \varphi_i + \tau_t + \varepsilon_{it} \quad (2)$$

$$y_{it} = \alpha + y_{i(t-1)} + \rho \sum_{j=1}^n W_{ij} y_{jt} + X_{it} \beta + \theta \sum_{j=1}^n W_{ij} X_{jt} + \varphi_i + \tau_t + \varepsilon_{it} \quad (3)$$

Formula (2) is the static Spatial Panel Durbin Model, where y_{it} is the explanatory variable, ie the financial development level of county i at year t , and formula (3)

is added to the time of the explanatory variable on the basis of formula (2). The first-order lag term $y_{i(t-1)}$ constructs the dynamic Spatial Panel Durbin Model to simultaneously examine the time lag and spatial lag effects of county-level financial development, and more accurately reflect the spillover effect of explanatory variables on the explained variables. In the above formula, X is an explanatory variable, including government intervention and a series of control variables, and β is an unknown parameter vector of explanatory variable X , which reflects the extent and direction of influence of government intervention and control variables on county financial development. $\sum_j W_{ij} y_{jt}$ is an explained variable spatial lag term, which mainly reflects the mutual influence between financial development levels in neighboring counties. Among them, W_{ij} is an $n \times n$ order spatial weight matrix, which reflects the spatial relationship between different counties. The coefficient of ρ as the spatially lagging term of the explanatory variable is the direction and degree of influence of the above-mentioned influence. If ρ is significantly positive, it indicates that there is a clear positive spatial correlation between the financial development level of counties. If ρ is significantly negative, it indicates that there is a significant negative spatial correlation between the financial development levels in counties. If ρ is 0 or not significant, it indicates that there is no spatial correlation in the level of county financial development. $\sum_j W_{it} X_{itj}$ is a spatially lagging explanatory variable that is used to reflect the impact of other county government intervention levels and control variables on the county's financial development level, while the coefficient θ reflects the direction and degree of influence of this impact. Finally, α is a constant term, φ_i denotes the regional fixed effect, τ_t denotes the time-fixed effect, ε is the random error term that obeys the standard normal distribution with expected 0 and variance σ^2 .

3.3 Spatial Weight Matrix Setting

The spatial econometric model mainly reflects the spatial relationship of variables through spatial weight matrix (W). Geographical neighboring is the basic reason for the spatial correlation of county financial development. Therefore, this paper sets spatial adjacency weight matrix to reflect this spatial adjacency. For the relationship, this matrix element takes the value 1 when the county unit is adjacent, 0 when it is not adjacent, and the diagonal element is set to 0. The space inverse distance weight matrix assumes that the spatial effect intensity depends on the distance. The closer the spatial units are to each other, the stronger the spatial effect. Therefore, the spatial relationship is more delicate than the neighboring weights. The matrix element is the reciprocal of the square of the spherical distance between the center of mass of the space unit calculated from the latitude

and longitude, and the diagonal element is set to zero. In order to eliminate the influence of the dimension of the weight matrix, this paper applies row standardization to the weight matrix of the ownership in the empirical process, so that the sum of the elements of each row of the weight matrix is 1. Finally, the spatial weight matrix used in this paper was generated using GeoDa 1.6.7 software.

3.4 Indicator settings and data sources

Goldsmith first proposed the concept of financial development and used the financial correlation ratio, that is, the ratio of the total amount of existing financial assets to national wealth at a certain point in time to measure the level of financial development; [17] Wen Tao and others used the stock of money against the ratio of GDP, credit inventory GDP ratio and economic securitization ratio serve as indicators of China's financial development. [18] Combining the availability of county-level data and county-level financial characteristics, this paper uses the ratio of loan balances of bank financial institutions to regional GDP to measure the level of county-level financial development (Findev). First, because the county level is still dominated by indirect financing represented by banks, the scale of loans has a strong representation on the scale of financial resources. Second, relative to the scale of deposits, local governments at county level pay more attention and are willing to introduce policies to attract the loan placement of financial institutions. So the scale of loans can better reflect the results of government intervention; Third, the relevant departments have not yet released the scale of social financing scale data at the county level, the social financing activities outside the financial institutions can not be accurately described. It should be noted that since the 2012 and 2013 Yearbooks for Socio-Economic Statistics in China (County and County) did not provide GDP data for each county from 2011 to 2012, and take into account that the overall level of development of the tertiary industry in the county area is low, so all the years used in this article are the sum of the output value of the primary industry and the secondary industry to replace the regional GDP, and the calculation of the subsequent relevant indicators is also the same.

The government intervention was mainly influenced by the government intervention motive and government intervention ability. [19] Ma Lianfu and Cao Chunfang used the three indicators of unemployment rate, local fiscal revenue, and R&D investment to fit the local government intervention index to measure the intervention motivation; [20] Shi Bo and Shen Kunrong used the ratio of local government expenditures to regional GDP to measure local government intervention capabilities. [21] Due to limited data, it is difficult to accurately measure

the motivation of intervention through fiscal revenue and expenditure data. Therefore, this paper uses government intervention capacity, ie, the scale of county-level local government public budget expenditure to represent government intervention. In addition, this paper also considers the control variables such as investment level, industrial structure, economic basis, human capital, and infrastructure level. The definitions of variables and descriptive statistics are shown in Table 1.

Table 1: Definition of major variables and descriptive statistics

Variable name	Variable Code	Variable descriptions	Average number	Mean	Standard deviation	Maximum number	Minimum number
Financial development	Findev	Year-End Loan Balance/Gross Regional Product	0.798	0.646	0.729	0.002	56.289
Government intervention	Govint	Public Budget Expenditure/Gross Regional Product	0.372	0.236	0.438	0.003	7.942
Investment level	Invest	Investment in Fixed Assets / Gross Regional Product	0.339	0.111	0.657	0.002	23.038
Industrial structure	Struct	Secondary Industry Output/Gross Regional Product	0.607	0.647	0.204	0.000	1.000
Economic basis	Ecibas	Resident Savings Balance / Total Population at the Year-end	0.953	0.661	1.014	0.001	15.790
Human resources	Humres	Middle School Enrollment/Total Population at the Year-end	0.079	0.074	0.035	0.001	1.549
Infrastructure	Infstr	Natural logarithm of local telephone users	10.559	10.714	1.237	3.045	13.911

Source: Own calculation.

This paper takes county-level administrative units as the research object, eliminating county-level units in municipal districts, municipalities directly under the Central Government, county-level units due to changes in administrative divisions and other reasons, and finally obtaining samples of 1895 counties (cities). All data are derived from the Yearbook of Socioeconomic Statistics of China's Counties (Cities) for the years 2003-2015.

4 Empirical results and explanations

4.1 The spatial correlation test of county financial development level

Based on spatial adjacency and spatial anti-distance two kinds of weight matrix, the results of spatial correlation tests of county financial development and government intervention variables are shown (as shown in Table 2).

Table 2: Moran's I Test Results for Financial Development and Government Intervention Variables

Year	Adjacency weight matrix		Inverse distance weight matrix	
	Findev	Govint	Findev	Govint
2002	0.364***	0.540***	0.225***	0.316***
2003	0.135***	0.547***	0.110***	0.318***
2004	0.280***	0.580***	0.187***	0.325***
2005	0.277***	0.466***	0.176***	0.275***
2006	0.270***	0.581***	0.161***	0.314***
2007	0.237***	0.475***	0.131***	0.287***
2008	0.354***	0.624***	0.173***	0.349***
2009	0.412***	0.607***	0.213***	0.341***
2010	0.390***	0.627***	0.211***	0.340***
2011	0.407***	0.618***	0.221***	0.346***
2012	0.384***	0.643***	0.216***	0.360***
2013	0.368***	0.656***	0.209***	0.359***
2014	0.313***	0.646***	0.180***	0.360***

Note: *, **, and *** are significant at the statistical levels of 10%, 5%, and 1%, respectively.

Under the two kinds of spatial weights, the county financial development and government intervention variables in China during the period from 2002 to 2014 were all significantly higher than 0 at the 1% level, which clearly deviated from the spatially random distribution, indicating that there was a clear spatial correlation between financial development and government intervention in the adjacent

counties. From a data-driven point of view, the hypothesis H1 is preliminarily verified. That is to say, county financial development and government intervention have a spatial correlation effect. It also shows that when analyzing the impact of government intervention on financial development, we must not ignore the influence of geographical factors and spatial spillover effects. Therefore Introducing a spatial econometric model for further analysis is needed. The spatial correlation test described above was implemented with Stata 14.0 software.

4.2 Spatial Panel Durbin Model Estimation Results

Due to the existence of spatial correlation, estimating the spatial model by ordinary least squares method is biased and inconsistent. Therefore, the Maximum Likelihood Method (MLE) is needed to estimate the parameter of the Spatial Panel Durbin Model (SPDM).[22] The estimation process is implemented with Stata 14.0 software. Table 3 reports the four sets of estimation results for the static and dynamic spatial panel Durbin model under the two spatial weights, respectively. For the selection of random effects and fixed effects in panel data models, existing studies suggest that fixed-effect models work better when the sample is confined to specific individuals. The Hausman test results in the empirical process also support the selection of fixed-effect models. According to Anselin's criterion, [23] this paper further uses the natural log-likelihood function (LL) and Akaike information criterion (AIC) to select among different types of fixed effects of the model. The results show that the model estimation result that contains bidirectional fixed effects of time and place is most optimal.

Table 3 shows that the spatial autocorrelation coefficient ρ of the spatial correlation of county financial development in each model is significant at the level of 1%, indicating that there is a spatial correlation effect among the financial development level between counties. Positive spatial autocorrelation coefficients indicate that geographically adjacent or similar counties also have similar levels of financial development, implying that improvement in the financial development level of a county will have a positive impact on the financial development of other counties. Positive influences may come from the mutual promotion of the development of the county economy and the deepening of the relationship between learning and cooperation. At the same time, regardless of whether the static spatial panel Durbin model or the dynamic spatial panel Durbin model, the spatial autocorrelation coefficient ρ of county financial development under inverse distance weight matrix is significantly higher than the adjacent weight matrix, the natural log likelihood function value and the Akaike information criterion value is also better, indicating that the closer the distance is, the higher the level of spatial

correlation of financial development is, ie the stronger the spatial spillover effect is. In other words, even if there are no common borders between the two counties, as long as they are geographically close to each other, their financial development levels also have spatial influence. The above results together verify the hypothesis H1.

Further, in the dynamic space panel Durbin model that considers the first-order lags in financial development, the coefficients of the first-order lagged terms of financial development are 0.325 and 0.320 under the two weights, respectively, and are significant at the 1% level, indicating that the level of county-level financial development in the previous period will have a positive impact on the current level of financial development. The introduction of the first-order lag term of financial development has reduced the spatial autocorrelation coefficient ρ of county financial development compared with the static model, but its natural log likelihood function value and the inspection value of the Akaike information criterion are better than the static model. This may be because the static model only considers the impact of current explanatory variables on financial development, bringing the lagged effects of their impact on financial development and the impact of unobservable factors such as institutions, environments, or technologies on financial development into spatial correlation. In the dynamic model, the first-order lag items of the financial development variables are used to characterize these lag effects and unobservable factors. After separating the influence of the financial development from the influence of spatial structural factors, it can be found that the static model overestimates the impact that spatial correlation has on financial development.

Finally, based on the estimated values of the explanatory variables and control variables and their significance test results, we can find that both government intervention and control variables have positive or negative effects on the financial development of the county and other counties in different degrees. This means that if the spatial lags of government intervention and control variables are ignored in the model estimation, the estimation results will be biased due to omission of variables. Therefore, when building the econometric model to study the development of county finance, we must consider the space spillover effect of these variables. However, according to LeSage and Pace's research, the use of point estimation methods of traditional econometric models to test for the existence of spatial spillover effects of variables is biased, that is, the coefficient estimates of the explanatory variables do not represent true partial regression coefficients and cannot be used to explain their spatial spillover effects on financial development. [24] To this end, they proposed that the estimated value of the

explanatory variable should be based on the difference in the source of the explained variable, and the coefficient estimate of the explanatory variable should be decomposed into direct effect, indirect effect, and total effect to observe the spatial spillover effect of explanatory variable and control variable on financial development.

Table 3: Spatial Panel Durbin Model Estimation Results

Variables and tests	Neighbor weights		Distance weight	
	Static SPDM	Dynamic SPDM	Static SPDM	Dynamic SPDM
ρ	0.3380*** (40.93)	0.2400*** (26.86)	0.7120*** (49.95)	0.5390*** (34.11)
L1. Findev		0.3250*** (55.57)		0.3020*** (51.20)
Govint	0.4420*** (26.60)	0.3610*** (22.59)	0.4150*** (25.75)	0.3430*** (22.03)
Invest	0.1230*** (15.08)	0.0974*** (12.88)	0.1180*** (14.49)	0.0950*** (12.48)
Struct	-0.4620*** (-10.05)	-0.4330*** (-9.32)	-0.5850*** (-12.91)	-0.5070*** (-11.00)
Ecobas	0.0123 (1.44)	-0.0154* (-1.83)	0.0195** (2.37)	-0.0138* (-1.70)
Humres	1.5770*** (11.44)	1.7030*** (10.34)	1.6350*** (11.85)	1.8210*** (11.00)
Infstr	-0.0171* (-1.85)	-0.0291*** (-3.31)	-0.0185** (-2.01)	-0.0296*** (-3.37)
W_Govint	-0.2150*** (-8.76)	-0.1780*** (-7.56)	-0.4100*** (-7.83)	-0.3530*** (-6.97)
W_Invest	-0.0140 (-1.09)	-0.0097 (-0.82)	-0.0298 (-1.17)	-0.0175 (-0.73)
W_Struct	0.4150*** (5.77)	0.3050*** (4.16)	1.3940*** (9.15)	0.8800*** (5.76)

W_Ecobas	0.0861*** (7.02)	0.0816*** (6.77)	0.1250*** (5.71)	0.1350*** (6.25)
W_Humres	-0.5710** (-2.41)	-1.1220*** (-4.10)	-2.7200*** (-5.11)	-3.4620*** (-5.97)
W_Infstr	0.0254 (1.58)	0.0189 (1.21)	0.0030 (0.08)	0.0219 (0.61)
Control time	Yes	Yes	Yes	Yes
Control area	Yes	Yes	Yes	Yes
likelihood	-14160.610	-10966.410	-13778.240	-10777.400
AIC	28349.220	21962.820	27584.480	21584.810
Observed value	24635	22740	24635	22740

Note: *, **, and *** are significant at the statistical levels of 10%, 5%, and 1%, respectively; the bracketed values are standard errors. In order to control the space, this article did not report the random effects and various fixed effects test results. If readers are interested, they can ask the author for the results. The following table is the same.

4.3 Decomposition of the Spatial Spillover Effect of Government Intervention on County Financial Development

According to the study of LeSage and Pace and the content of this study [24], direct effects represent the spillover effects of government intervention and control variables on the county, that is, the average impact on its own financial development; indirect effects represent government intervention and control variables on other counties. The spillover effect, that is, the average impact on the financial development of other counties; the total effect represents the average impact of government intervention and control variables on the financial development of the county and other counties. The specific decomposition results are shown in Table 4.

4.3.1 The spatial spillover effect of government intervention in the county.

According to the results of the effect decomposition in Table 4, the direct effects of government intervention on financial development in each model are significantly positive. That is, government intervention has a positive spatial spillover in the county's financial development, indicating that government intervention has played a positive role in improving the financial development level of the county, thus verifying hypothesis H2.

The reason for this is that both the "enterprising policy" and the "protective policy" can improve the county's financial development level. On the one hand, the county economy consists of a large number of small and medium-sized micro-enterprises and rural economic entities. The absence of the existing property rights system and credit system has resulted in significant "hard constraints" on county-level financial development. Therefore, the improvement of the property rights system, the establishment of credit systems and the establishment of a government credit enhancement system is particularly important for the development of county finance. The county government has introduced an "enterprising policy" that can improve the property rights system and credit system, guide innovative financial products and service methods, and improve the industry's ability to absorb financial resources so as to improve the level of financial development. On the other hand, local governments also influence the actual and nominal costs of financial resources through "protective policies", such as the use of various tax and fee reductions, subsidies, incentives, and other policies to attract financial institutions to settle in and increase the intensity of credit in order to increase the level financial development level of the county. In addition, the impact of government intervention on the financial development of the county in the dynamic spatial panel Durbin model is less than that in the static model, mainly because the time lag effect of the above-mentioned policies and measures was included in the static impact model.

4.3.2 The spatial spillover effect of government intervention in counties.

The effect decomposition results in Table 4 also show that the indirect effects of government intervention on financial development in each model are significantly negative, suggesting that government intervention has negative spatial spillovers for financial development in other counties, that is, government intervention in a county is not conducive to the improvement of financial development in other counties. Among them, the negative spillover effect of the dynamic spatial panel

Durbin model is more prominent, mainly because the time lag effect of this negative spillover is obscured by the static model. The above estimation results together verify the hypothesis H3. This conclusion reveals the tendency of local governments in the choice of intervention policies.

In reality, the effective implementation of “cooperative policies” often requires the reform and improvement of the institutional environment at the province level and even at the national level. Due to the lack of top-level system design, such policies introduced by county-level local governments are often focus on their own businesses and are difficult to play their roles together as a team with regional synergies. At the same time, the formulation and implementation of these policies are costly and time-consuming, and have a higher requirement for local financial resources. For example, the establishment of a credit information system within the county area requires the integration of financial institutions and their regulatory agencies, public security, industry and commerce, taxation, quality supervision, social security, and transportation. With multi-sectoral information, coordination is extremely difficult and costly. The introduction of “protection-based policies” is easier for county-level local governments, and more in line with local government's preference for policy options. The author's investigation also found that the local financial management departments often allocate new employees and more financial funds to the implementation of “protected policies”, and such policies are also more likely to be favored by local leaders. In the implementation process, its policy standards will be dynamically adjusted according to the latest policies in the surrounding counties. Therefore, to promote the development of county finance, it is necessary not only to increase policy investment, but also to coordinate policies between counties.

4.3.3 The overall spillover effect of government intervention across counties.

According to the decomposition results of the total effects in Table 4, although the total effect coefficients of government intervention variables under the spatial adjacency weights are all significantly positive, their coefficient values are significantly smaller than the direct effects due to negative indirect effects. Under the inverse distance weight, the direct effect of the government intervention variable is largely offset by the negative indirect effect, so its overall effect is not significant. The above results imply that the positive spillover effect of government intervention on the county's financial development has been weakened by the negative spillover effects of intervention by other county governments, indicating that there

is still room for further coordination and cooperation among local governments around financial development.

Table 4: Spatial Spillover Effect Decomposition Results

Effects and variables		Neighbor weights		Distance weight	
		Static SPDM	Dynamic SPDM	Static SPDM	Dynamic SPDM
Direct effect	Govint	0.4360*** (27.84)	0.3540*** (27.34)	0.4120*** (26.56)	0.3390*** (26.43)
	Invest	0.1240*** (18.78)	0.0989*** (12.51)	0.1190*** (17.71)	0.0963*** (12.02)
	Struct	-0.4370*** (-8.89)	-0.4310*** (-8.31)	-0.5550*** (-11.35)	-0.5050*** (-9.72)
	Ecobas	0.0205** (2.48)	-0.0112* (-1.45)	0.0240*** (2.97)	-0.0117 (-1.54)
	Humres	1.5480*** (9.77)	1.6710*** (10.73)	1.5660*** (9.88)	1.7820*** (11.36)
	Infstr	-0.0148 (-1.51)	-0.0277*** (-2.90)	-0.0181* (-1.84)	-0.0288*** (-3.01)
Indirect effect	Govint	-0.0934*** (-2.80)	-0.1180*** (-4.58)	-0.3930** (-2.26)	-0.3740*** (-3.89)
	Invest	0.0367** (2.27)	0.0171 (1.32)	0.1760** (2.28)	0.0725* (1.66)
	Struct	0.3660*** (3.74)	0.2620*** (2.67)	3.3500*** (6.49)	1.3400*** (3.87)
	Ecobas	0.1270*** (8.41)	0.0968*** (7.85)	0.4710*** (7.00)	0.2740*** (7.20)
	Humres	-0.0367 (-0.10)	-0.9100*** (-2.66)	-5.2550*** (-2.63)	-5.4540*** (-4.40)
	Infstr	0.0271 (1.34)	0.0152 (0.74)	-0.0402 (-0.36)	0.0159 (0.19)
Total effect	Govint	0.3430***	0.2360***	0.0188	-0.0358

		(11.51)	(10.49)	(0.11)	(-0.39)
	Invest	0.1610*** (10.14)	0.1160*** (8.79)	0.2940*** (3.91)	0.1690*** (4.03)
	Struct	-0.0715 (-0.69)	-0.1690* (-1.79)	2.7950*** (5.44)	0.8360** (2.51)
	Ecobas	0.1480*** (9.40)	0.0856*** (7.48)	0.4950*** (7.41)	0.2620*** (7.25)
	Humres	1.5110*** (3.89)	0.7610** (2.05)	-3.6890* (-1.86)	-3.6720*** (-2.96)
	Infstr	0.0123 (0.55)	-0.0125 (-0.55)	-0.0582 (-0.53)	-0.0129 (-0.15)

Note: *, **, and *** are significant at the statistical levels of 10%, 5%, and 1%, respectively; the bracketed values are standard errors.

4.4 Spatial Overflow Effect of Control Variables on County Financial Development

The coefficient decomposition results of the control variables in Table 4 indicate that the direct, indirect, and total effects of the investment level on county financial development in each model are mostly positive, indicating that the investment level has produced financial development for the county and other counties. The positive space is overflowing, because investment is conducive to promoting the level of industrial development between counties and regional synergies, so as to further improve the ability of county economies to absorb financial resources, and eventually increase the level of financial development in all counties. The industrial structure has a negative spatial spillover to the county's financial development level, and there is a positive spatial spillover to other county financial development levels. At the same time, the total effect of the industrial structure on county financial development is not robust enough. This may be because the optimization of county industrial structure fails to attract more financial resources, and the link between county industrial structure optimization and financial development needs further improvement. The spillover effect of the economic base on the development of financial services in this county is not sound enough, but it presents a positive spatial spillover for financial development in other counties. This may be because the virtuous circle of county economic development and financial development has not been fully formed. Human capital has a positive

spatial spillover to financial development within the county, but it has negative effects on the financial development of other counties, and its overall effect is not robust enough. This is related to insufficient human capital flow at the county level. Finally, the infrastructure presents a weak negative spatial spillover effect on financial development within the county, and there is no significant spatial spillover effect between the counties and the county as a whole, indicating that the level of infrastructure construction at the county level is still low, and no complete interconnection has been achieved. Its overall role in promoting financial development needs further development.

5 Conclusions and Suggestions

This paper adopts panel data of 1,895 counties (cities) from 2002 to 2014, and builds a static and dynamic spatial panel Durbin model. Based on spatial correlation perspectives, it empirically tests the spatial spillover effect of county financial development and the government intervention on county financial development, and the spatial spillover effect within the county and county. This paper mainly draws the following conclusions: First, there is a spatial correlation effect in the development level of county finance, and geographically adjacent or similar counties have similar levels of financial development. The improvement of the county's financial development level has an effect on the development of financial development in surrounding counties. Second, government intervention is an important factor affecting the development of county finance. Moreover, under the perspective of spatial correlation, government intervention has a spatial spillover effect on county financial development. There is a positive spatial spillover effect of government intervention on financial development in the county, and under the condition of fiscal decentralization, competition among governments makes government intervention to other county financial development. A negative space overflow occurred. Third, county level financial development has a time-lag effect, which is positively affected by the level of financial development in the previous period. The existence of spatial spillovers has also led to further differences in the impact of investment level, industrial structure, economic base, human capital, and infrastructure on financial development between county and county.

Based on the above research conclusions, this article proposes the following recommendations. First, the central government should strengthen the design of top-level systems for local financial reforms, such as building a unified national credit information system, further promoting the reform of the property rights system, etc., eliminating local governments' use of preferential policies such as subsidies and incentives to intervene in financial institutions and financial market microcosms. The behavior of decision-making leads local governments to shift from "competition for expenditures" to "institutional competition". At the same time, a long-term evaluation mechanism for local government officials has been established to prevent local governments and their financial management departments from falling into disorderly competition due to the pursuit of short-term growth in the financial industry's output value and tax revenue. Second, local governments should further clarify their own functional boundaries in local financial reform and development, commit themselves to the improvement of market fundamentals, the maintenance of market order, investor protection, and risk education. Ex-

changes and cooperation will amplify the positive spatial spillover effect of government intervention in the region; avoid the use of “protective policies” and reduce direct micro-intervention in financial markets and financial institutions. In addition, for higher levels of local government, in strengthening the peer level of government communication coordination, it should also coordinate the competition relationship of the next level of local government, and focus on building a good competitive mechanism for the lower level of local government. Third, county-level local governments should continue to promote the optimization of industrial structure, improve the quality and effectiveness of economic growth, increase the level of industrial development, economic growth and financial development, and solidify the foundation for financial development. Strengthen the construction of infrastructure, realize the interconnection of regional infrastructures, and give full play to its role in promoting regional financial development. Promote the level of county-level human capital and promote the flow of talent in the region, and play the role of intellectual capital in the spillover effect of county-level financial development.

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Part 1 Framework conditions and macro-economic analysis

C Risk Management for small and medium-sized Enterprises in the Digital World

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Abstract

Risk Management for small and medium-sized Enterprises (SMEs) in the Digital World is becoming ever more important. Risk topics can be found almost anytime anywhere. Risks affect SMEs and risks of digitalization have increased the importance of risk management. The International Organization for Standardization and the IRM (Institute of Risk Management) offer well thought through characterizations for solid risk management. These definitions are suitable for SMEs, too. Principles, framework, and process are three pillars of sound risk management: 11 principles according to ISO 31000 are the foundation for risk management in the digital world and also for SMIs. A Risk management framework according to ISO 31000 is vital for making risk management work. The Risk management process according to ISO 31000 is comprehensive, integrated, and a reinforcing loop.

What does that all mean for SMEs? A list of possible risks that can hit the enterprise needs to be generated. Four main categories including market, credit, operational and business risks need to be assessed. Market and credit risks are more suitable for quantitative assessments, i.e. via volatility of market prices. For other risk categories, a successful risk analysis requires deep understanding of underlying factors. For some risks a mainly qualitative scale is better suited for risk assessment. As a result of the assessment a risk matrix depicts the likelihood of occurrence and impact of risks.

The assessment needs to be followed by a choice of the appropriate risk treatment. Five possible strategies for risk treatment exist: (1) Risk avoidance is an effective, but often hardly possible strategy. (2) Risk mitigation is a viable strategy focusing on reducing the likelihood and/or the impact of risk events. (3) Risks can be transferred, for example to insurances, (4) Risks may be shared with others and (5) Risks may (and should) be retained in some cases, but always as a result of a conscious decision.

Key words:

Risk Management, Digitalization, SME

JEL-Classification:

G32, O33

1 Introduction

Risk management is becoming ever more important. That holds true for small and medium enterprises in the digital world as well. A random search for headlines apparently demonstrates that risk is all over the place. Therefore, no serious enterprise can afford not to deal with proper risk management.

As a first step an appropriate definition of risk management can be found at the International Organization for Standardization (ISO) and the risk management Institute (IRM)¹. ISO is an independent, non-governmental international organization with a membership of 162 national standards bodies. Through its members, ISO brings together experts to share knowledge and develop voluntary, consensus-based, market relevant International Standards that support innovation and provide solutions to global challenges.

Almost all activities of an organization involve risk. Organizations manage risk by first assessing it, which means identifying it, analyzing it and then evaluating it. **Risk assessment** is therefore dealt with in a little more detail in the second chapter of this article.

As a consequence of the risk assessment an organization should decide whether the risk should be modified by risk treatment in order to satisfy their risk criteria. The third and closing chapter of this article therefore deals with **risk treatment**.

ISO 31000 is the standard for risk management. ISO 31000 was prepared by the ISO Technical Management Board Working Group on risk management.

While all organizations manage risk to some degree, this International Standard establishes a number of principles that need to be satisfied to make risk management effective. This International Standard recommends that organizations develop, implement and continuously improve a framework whose purpose is to integrate the process for managing risk into the organization's overall governance, strategy and planning, management, reporting processes, policies, values and culture.

Overarching goals, strategies and policies of the organization of risk management has to be determined: Criteria to categorize and identify risks; methods for

¹ ISO is an independent, non-governmental international organization with a membership of 162 national standards bodies. Through its members, ISO brings together experts to share knowledge and develop voluntary, consensus-based, market relevant International Standards that support innovation and provide solutions to global challenges. <https://www.iso.org/home.html>.

risk assessment; responsibilities for risk decisions; resources to cope with risks; internal and external reporting; as well as educate personnel for risk management.

Principles, framework, and processes are the three pillars of sound risk management.

There are 11 principles according to ISO 31000. are the foundation for solid risk management in the digital world also for small and medium Enterprises these principles mandate that (1) risk management creates value, (2) risk management must be an integral part of the organizational processes. (3) Risk management is a part of decision making. (4) Risk management explicitly addresses uncertainty. (5) Risk management is systematic, structured, and timely. (6) Risk management is based on the best available information. (7) Risk management is tailored. (8) Risk management takes human and cultural factors into account. (9) Risk management is transparent and inclusive. (10) Risk management is dynamic, iterative and responsive to change. (11) Risk management facilitates continuous improvement and enhancement of the organization.

The risk management framework according to ISO 31000 is vital for making risk management work. The framework starts with a clear mandate and commitment from the top. Based on in interchange with that mandate, a loop begins. The initial step is the design of the framework for managing risk. Once that has been designed the implementation of the risk management framework follows. Monitoring and review of the framework is the next element in the loop. The loop is completed by a continuous improvement of the framework which then will influenced the design of the framework and that step closes the loop.

The risk management process according to ISO 31000 is comprehensive, integrated and a reinforcing process. It begins with establishing the context. The risk assessment is the central part of the process and includes risk identification, risk analysis, and risk evaluation. Risk assessment is followed by the risk treatment. The process also includes 'monitoring and review' and 'communication and consultation' as accompanying steps. All of the elements of the process are in a close interlinkage.

Based on this introduction, SMEs need to figure out what that all means for them. SMEs should not believe that 'this is only for the big ones', or 'I have just a small shop', 'digital is already complicated enough', or 'I pray nothing will go wrong'.

2 Risk Assessment

Actually, getting started with risk assessment is not too difficult for SMEs in the digital world. A list of possible risks that can hit the SME needs to be generated as a first step. Typically, these risks are subdivided into four categories including market risks credit risks operational risks and business risks. Each of them have sub categories. Market risks for example can be subdivided into interest rate changes, raw material price changes, exchange rate changes and so on. Another example includes business risks which can be subdivided into legal risks, regulatory risks, changes in business volumes and margins, the occurrence of substitutes and the digitalization.

Once the risks are identified the next step will be two assess their characteristics. For example, within market risks, the volatility of market prices are an important element of such an assessment. It might not be surprising that German bunds for example are less volatile than the prices of auto maker BMW's stocks. However, crude oil for example is even more volatile than the stock of the auto maker. And it might be less evident that in quite a few years coffee prices have been even more volatile than crude oil prices.

An example for analyzing credit risk is the number of defaults ('Insolvenzen') in Germany. In the years from 2002 to 2010 the figure more than doubled. Between 2010 and 2016 the number fell from 133'000 case a year to less than 98'000. The figures demonstrate a substantial volatility of defaults.

Operational risks are much more difficult to quantify. In this case, a successful analysis requires a deep understanding of underlying factors. Operational risks can be subdivided in those that are internal (in the company) and those that are arising from external factors.

Business risks have high relevance for SMEs. A substantial proportion of German industry is related to cars. One occurrence of business risk can be illustrated by the substantial volatility of the German car industry's total sales. Domestic sales have had annual growth rates between -15% and +12% during the ten year period from 2006 and 2015. Export sales are more important given the overall size (total annual sales were 263 bn. EUR compared to 141 bn. EUR domestic sales). At the same time the volatility of export sales is substantially higher with growth rates ranging from -24% to +32% over the same ten year period from 2006 and 2015. SMEs are often suppliers and therefore need to be familiar with the development of the industry sectors they depend on. For other business risks, such as project risks, a mainly qualitative scale is better suited for risk assessment than quantification.

To finish up the assessment, a simple tool should be used: It is useful to categorize the various risks identified and analyzed in a matrix. Such a risk matrix depicts the likelihood of occurrence in one dimension and the impact of risk in the other dimension.

In the example shown in figure 1 the likelihood of occurrence is subdivided into 'unlikely', 'possible', and 'likely'. The impact is subdivided into 'low', 'medium', 'high', and 'serious'. Each of the resulting 3 x 4 arrays is a combination of likelihood and severity. The matrix is subdivided into red, amber, yellow, and green zones indicating high, medium high, medium, and low risks. In case of limited capacity, management should concentrate on the red and amber areas.

Figure 1: Example of a risk matrix

		Likelihood of occurrence		
		Unlikely	Possible	Likely
Impact	serious	Amber	Red	Red
	high	Yellow	Amber	Red
	medium	Yellow	Yellow	Amber
	low	Green	Green	Green

3 Risk Treatment

Five possible strategies for risk treatment exist: (1) Risk avoidance is an effective, but often hardly possible strategy. (2) Risk mitigation is a viable strategy focusing on reducing the likelihood and/or the impact of risk events. (3) Risks can be transferred, for example to insurances, (4) Risks may be shared with others and (5) Risks may (and should) be retained in some cases, but always as a result of a conscious decision.

Risk avoidance is the most radical instrument to cope with risks. It is effective but often hardly possible. Some specific risks can be avoided. Several banks for example discontinued prop trading after the financial crisis. Many online vendors only do prepaid orders to avoid credit risks. Avoiding presence on some digital platforms, some markets and or geographies can often be seen in practice. Notwithstanding that, business is about taking risks and therefore further strategies need to be considered.

Risk mitigation is a viable strategy which comes in two dimensions. Firstly, the reduction of the likelihood of the occurrence. An example from the digital world is employing the best possible virus scans. Secondly, the risk impact should be reduced in case the risk event took place. Coming back to the virus example, complete and timely back-ups and contingency plans belong to such a set of measures.

Risk can be transferred, for example to insurances. Passing risks to another party is common. But keep in mind this transfer does not change risk. Transferring risks almost always results in paying an (insurance) premium to another party. In order to avoid the classic moral hazard issue the willingness to except deductibles may demonstrate the willingness to maintain responsibility and deal with the moral hazard issue.

Risk sharing allocates proportions of risk to different parties. Some SMEs have customers and suppliers take their share of risk. Banks are asking their customers to protect their passwords and/or force them to change them periodically, and they may require multiple apps for login. (Larger) project risks are shared between several parties involved.

Retaining risk should be the result of a conscious decision to accept the risk. Such a strategy is in particular relevant if no one else knows the risk better and therefore the current owner is the best owner. A smart strategy in that context includes budget reserves for unforeseen losses due to the risks taken and developing a contingency plan.

A careful choice of the right strategy or a combination thereof and based on a solid risk assessment will enable SMEs to properly cope with risks, including, but not limited to those risks that arise from the digital world.

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Part 1 Framework conditions and macro-economic analysis

D The Exploitation Trap of German small and medium-sized Companies – Ways in and Ways out

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Abstract

German small and medium-sized entities (SMEs) are rather successful thanks to their niche orientation, their commitment to quality and their professional motivation to improve their products. As a consequence, they are 'fully booked' in terms of orders, strongly internationalized and focused on their core business. However, empirical evidence suggests that success may breed failure and that an 'innovator's dilemma' often appears. Thus, nurturing the core business can often pave the way to the 'exploitation trap' that attracts almost all the effort and energy so that renewal and business model innovations fall short. Why is this so and what can be done to circumvent this trap? Evidence from the field as well as lessons from entrepreneurship theory provide a portfolio of means to get out of this problem and to reinforce exploration. These considerations primarily apply to German SMEs, but to some extent to Chinese companies as well.

Key words:

German Mittelstand; Ambidexterity; Exploration; Exploitation

JEL-Classification:

L21; L26; O31

1 Introduction

Literature suggests that German small and medium-sized entities are in a rather privileged situation. To a large extent, they are strong in terms of typical input and output measures, well positioned in global market niches, and successful in terms of performance (Federal Ministry of Economics and Technology, 2013). With more than 1,300 'hidden champions', the German Mittelstand outpaces SMEs of every other country (Federal Ministry of Economics and Technology, 2013). Hermann Simon, an expert of SME management for many decades, coined the term "German Mittelstand" and transferred a German term for SMEs into the English language to express the specific state of the very many 'hidden champions' the German SME scenery consists of (Simon, 1992, 1996, 2009). Besides that, Audretsch and Lehmann (2015) point out the role of small businesses for the German economy and its capacity to change – themselves and the economy, particularly after the economic crisis at the beginning of the new millennium.

Despite these – often traditional – strengths, German SMEs are vulnerable in many ways. Whereas actually the world takes notice of 'China going global' with some notable acquisitions of German Mittelstand companies (e.g. the Kuka, a robotics company, takeover by Midea or the Borgward brand revival by Beiqi Foton Motors for manufacturing electric cars), the digital transformation casts a shadow on non- and slow-moving companies. It becomes more and more evident that German Mittelstand companies are strong in terms of the current business while at the same time struggling with business renewal that keeps pace with turbulent environments. In this context, we can refer to the ambidexterity discussion triggered by March (1991). March differs among exploration and exploitation – with exploration focussing future business and exploitation pointing at the current business. Ambidexterity implies a certain balance of exploration and exploitation. This paper rests on the observation that the German Mittelstand realizes an imbalance with an overload of exploitation and a partial neglect of exploration. As it is hard to get rid of this imbalance while the current business is running well, this paper calls the problem 'exploitation trap'.

Against this background, the research question of the paper is: what are the reasons for many German SMEs to get caught in this exploitation trap and what are possible ways to get out of it? To address this research question, the paper follows a conceptual approach that builds on theoretical approaches like predominantly entrepreneurship theory and the resource-based view.

2 Sketching out the 'Anatomy' of the German Mittelstand

Analyses on the 'hidden champions' of the German Mittelstand as world-market leaders often point to the industry background (Simon, 1996; Simon, 2009). If it is possible to generalize an industry background, some aspects stand at the fore.

First, the respective companies predominantly belong to the mid-size category of even crossed the boundary to smaller-scale big companies (Federal Ministry for Economics and Technology, 2013). However, their very nature, their internal structure and their mindset deviate so much from big companies that subsuming them under the SME umbrella is useful. Besides that, the German Mittelstand is very much focused on business-to-business markets (about 90% according to Federal Ministry of Economics and Technology, 2013). Most relevant industries in this regard are: mechanical engineering, electrical engineering, industrial products, car components, plant engineering, pharmaceutical and medical technology, high-tech solutions, chemical products, industrial services (& logistics) and some commodities. Many of the companies still have a family background, but also a high level of professionalization due to integrating external know-how at earlier steps of their growth process.

Besides this more or less 'topographical' information, there are some more characteristic features of particularly German Mittelstand companies that help explaining their specific output and positioning on the global scale. Among the list of many factors, the following stand at the fore (Simon, 1992; Simon, 2009): (i) the middle class in sociological terms developed in medieval times. It marked the class between the poor farmers and workers ('lower class') and the rich aristocrats & clergy ('upper class'). The role of the middle class was more fluid than the role of any other class. Thus, the middle class people were animated to care for their wealth and to take potential chances of upward mobility – with the uncertain, but possible perspective to get rich. (ii) Germany in many centuries was away from being a nation state. Even in the 19th century, the German territory consisted of many loosely coupled 'states' – with the consequence that crossing borders was nothing unusual, but a little bit like everyday life. A somewhat international orientation developed in line with respective competences. (iii) Different from many other surrounding countries, Germany had for many decades no real capital as core hub of social and political life. The dominant role of Berlin developed rather lately. Thus, Germany always had strong regions and related 'regional capital'. (iv) Favorable for the entire development was the central geographical position in Europe with access to two seas. Thus, Germany and its companies were rather early deeply involved in international commerce. (v) Related to this, there was a strong trend towards specialization, fueled by thorough

handcraft and growing technical expertise. This helped building traditional strengths and a fast-growing technical manufacturing basis. (vi) Expertise in organization was available due to the tradition of bureaucracy particularly of the Prussian system. What sounds today as an obstacle to change was in earlier times a strong lever of professionalization thanks to experiential knowledge (Clark and White, 2010). (vii) More recent sources of strength favoring the German Mittelstand is the vocational education system. Germany developed a highly effective dual education system where people are trained on the job and in specialized schools simultaneously.

Whereas all the mentioned factors form the circumstances surrounding the German Mittelstand, the picture of the real anatomy is still not complete. It is useful to develop an understanding of this anatomy by contrasting the German Mittelstand as one archetype of a regional governance structure with the Silicon Valley model – as Audretsch (2017) suggested.

Table 1 illuminates the main differences between the German Mittelstand and the Silicon Valley and provides us with criteria constituting the anatomy.

Table 1: German Mittelstand versus Silicon Valley

German SMEs ('Mittelstand')	Silicon Valley and the Startup Landscape
Driven by regional expertise in manufacturing	Driven by new emerging technologies
Family tradition and local roots ('envy of the region')	Entrepreneurial mindset in the global entrepreneurship stronghold
Based on applied research and skilled labor	Based on basic research and top human capital
Sustainable wages	High wages
Stability logic	Disruption logic
Low growth	Scale-up races
Traditional sources of finance and other assets	Innovative sourcing approaches

Source: animated by Audretsch, 2017.

As shown above, German regions are strong due to autonomy and related experience. This regional experience draws on multi-generational learning and beliefs that knowledge is useful. Rather different from Silicon Valley, this prevents companies and people from too drastic changes.

Besides that, the companies very often have a strong imprint from the founding and/or owning family. This provides the companies with even higher levels of stability. The family tradition itself is often related to success stories, the regions are aware of. In some cases, the companies became the envy of the region and inhabitants are proud to have the opportunity to work for these socially well-respected firms.

The workforce does not necessarily comprise of an academic background. Moreover, many people in companies are not really entrepreneurial in their mindset. They comprise of a sound education in the school system and in the dual education system. The skills are specialized and mature, but not necessarily high-tech oriented – as is the case in Silicon Valley. Craftsmanship plays a much more important role. This background is one reason why the employees get sustainable wages they regard as fair, whereas employed people in Silicon Valley get much money – and need this money to pay the living expenses.

As for change, German Mittelstand companies are very much open for improvements and well-planned innovations. Nevertheless, real disruptions are not the primary ambition. Stability is much appreciated and the pace of growth or change does not count so much in the respective value system – with all its consequences in terms of corporate finance. This also makes a huge difference between the German Mittelstand and Silicon Valley.

Based on these criteria, a clear picture of the anatomy of the German Mittelstand is possible. However, the German Mittelstand is by no means a coherent body of rather similar firms. The other way round, there are striking difference. However, if there are any patterns in terms of general similarities, the above mentioned features may provide guidance.

3 The Exploitation Trap of German Mittelstand Companies – The Way in

The reasoning above already leads us to the track to recognize the exploitation trap and its reasons. Building on March (1991), German Mittelstand companies are in an excellent position to conduct a both effective and efficient core business and, thus, are strong in terms of exploitation. They practice exploitation, indeed, which materializes in niche market leadership, a strong global positioning, a reliable international value-added system and famous brands that signal high quality of their offerings. As a consequence, those companies are mostly working to full capacity in their core business.

This privileged position, however, goes at the expense of limited leeway and time for activities beyond their core business as e.g. experimentation and advanced steps towards future business. A good example is the state of the IT departments. Fully charged and small in terms of employees, there is only limited room for the IT departments to cope with the challenges of digital transformation seriously, i.e. going beyond small-scale solutions such as online shops or other 'soft modes' of digitization. In other words, they are highly committed to core business that goes along with specialized assets. In this vein, also the workforce is specialized on everyday business and the incentive structures keep them on this particular track. In terms of the resource-based view (Dierickx and Cool, 1989; Freiling, 2004), there are strong asset mass efficiencies in core business activities and these efficiencies drive the performance of the business.

However, what does this mean as for exploration? Basically, German Mittelstand companies are aware of the necessity to innovate in order to keep the position in the high-tech or middle-tech niches of global markets. However, the way how innovation happens is based on more or less linear innovation models that dominated earlier decades. In more recent times, disruptive innovations question linear innovation thinking in many industries (Christensen, 2003) – and challenge particular those companies that do not change their innovation logic. The innovation profile of German Mittelstand companies can be roughly sketched out like this: (i) German Mittelstand companies are still very reluctant when it comes to open innovation issues (Chesbrough, 2003). They mistrust this way of developing new intellectual property and prefer more 'protected' modes of innovation. This helps avoiding knowledge spillover, but goes at the expense of limited 'creative in-flow'. As this is more or less a question of the dominant innovation logic, these companies are still before making a transition to a new innovation logic – a step that is hard to take and that requires both fundamental learning and unlearning processes. (ii) Within the companies, the companies involve parts of their workforce in innovative endeavors. However, the 'innovation playgrounds' are to some

extent limited in space and numbers and the innovation activities follow more a project-oriented planning approach rather than giving way to comprehensive experimentation beyond core business. (iii) As a consequence, innovation processes are still to a large extent governed by more hierarchical than heterarchical modes. Insofar, leading managers have considerable discretion of channeling innovative moves. As a consequence, the field from frame-breaking, disruptive innovation is not as open as in case of heterarchical governance.

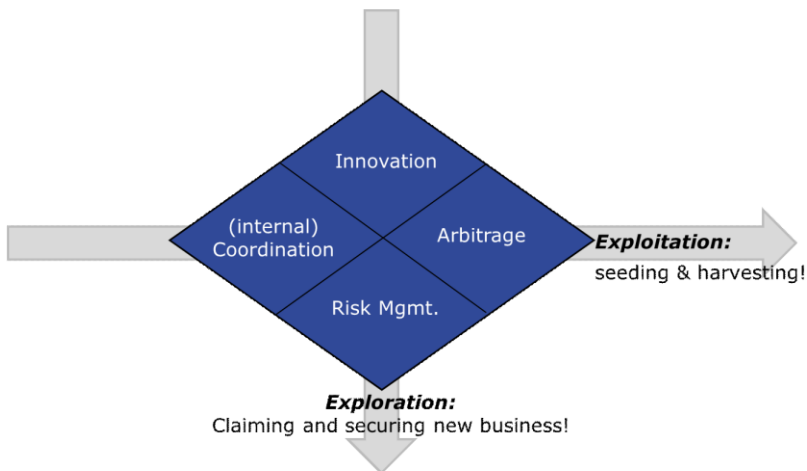
With a first understanding of the exploitation trap, we can now move on to a theoretical perspective of this phenomenon. This does not only explain the way into the trap and the considerable rigidities in such a state, but also help figuring out how to depart from this state that is unfavorable at least in the long run.

4 Ways in and out: Understanding the Exploitation Trap Theoretically

As mentioned above, entrepreneurship theory can be a useful perspective to reflect companies in the tension field between exploration and exploitation. As a first step, we introduce entrepreneurship theory in more detail in order to relate it to the ambidexterity discussion.

Entrepreneurship theory has a long history in business and economics research. The seminal work traces back to Cantillon in 1755 (Cantillon, 1755), stressing the risk-taking as a core tasks of entrepreneurs. Schumpeter (1934) pointed to innovation later on, whereas Gartner (1990) referred to (internal) coordination and Kirzner (1973) to arbitrage with an emphasis on making markets. At first glance, all these four different views seem to be contradictory in nature. However, they all point out what entrepreneurial action can be about. In this vein, Freiling (2008) aimed at synthesizing these views into a cohesive whole. Rather than stressing only one entrepreneurial function, he proposes a multi-functional view with four functions constituting entrepreneurial action. With adapted entrepreneurial action among these functions there is a positive impact on performance as Freiling and Lütke Schelhowe (2014) point out. Figure 1 illuminates this multi-functional approach to entrepreneurship theory.

Figure 1: The Multi-Functional Approach to Entrepreneurship Theory (according to Freiling, 2008)



The multi-functional approach to entrepreneurship theory assumes that entrepreneurial action goes beyond exploration, i.e. all activities of developing and setting up new businesses. To act entrepreneurially, involves innovation and risk-taking, but goes beyond these explorative functions as entrepreneurs also need their entrepreneurial skills to capitalize on the explorative moves they made. This can be considered by accompanying the two explorative functions, namely innovation and risk-management, by performing two exploitative functions as well, namely internal coordination and arbitrage – as Figure 1 suggests. Moreover, this set of entrepreneurial functions helps explaining performance: the more the functions are executed and the more they are well aligned, the more performance will increase, as entrepreneurship theory suggests.

Against this background, the situation of German Mittelstand companies is easy to mirror. German Mittelstand companies are strong in internal coordination as they successfully involve their employees in well-running value-added activities. Moreover, they built up a strong market position with sound customer relationships in many international markets. The strength in exploitation is highly visible. However, the bottleneck of entrepreneurial action is exploration. To avoid misunderstandings, German Mittelstand companies are involved and experienced in both innovation and risk management activities. However, exploration and exploitation are not well balanced so that ambidexterity as a desirable state and presumption for higher performance level in the long run is currently not achieved. This misalignment is to some extent caused by changing external environments. The speed of change increased dramatically during the last two decades. Particularly the digital transformation allowed disruptive innovation processes that materialize in completely new business settings like the Internet of things. Whereas the exploration activities of German Mittelstand companies developed more in a linear fashion, the pace of technological and economic development in the society was more or less non-linear.

Entrepreneurship theory helps identifying the levers to reanimate explorative action of German Mittelstand companies by pointing to innovation and risk management. To find new approaches adapted to SMEs is one issue when trying to get out of the exploitation trap. In this vein, the next section portrays suitable ways.

5 Out of the Exploitation Trap: Basic Considerations and Approaches

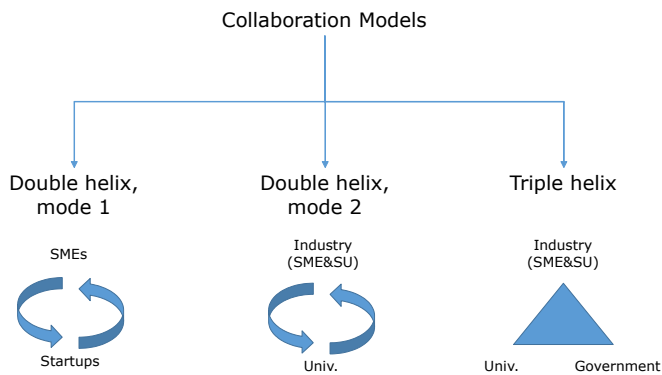
Considering ways out of the exploitation trap involves keeping an eye on the most critical reasons for getting caught in this trap. By recalling these reasons, we can identify basic levers for triggering change: (i) a very fundamental problem of German Mittelstand companies is the way of thinking, the mentality. Obviously a shift on this deep rooted organizational level is required. (ii) A lack of institutionalized 'exploration playgrounds' hampers unfolding exploration activities. (iii) Finally, governance is a problem as exploration is hindered by too much hierarchy.

Way of thinking. Bettis and Prahalad (1995) addressed the phenomenon of 'dominant logic'. The dominant exploration logic of German Mittelstand companies focuses more closed than open modes of innovation and more linear than disruptive endeavors. The basic question is how to keep up the explorative tension and spirit over time. Interestingly, exactly this topic has been addressed in 2017 by a well-established company and world market leader from Silicon Valley: Amazon. Jeff Bezos, Amazon's CEO and entrepreneurial driver, formulated the so-called 'day one' strategy (USA Today, 2017). The day one strategy is about keeping the explorative tension of the very first days of a company after foundation. Usually, this tension dilutes over time and fades away. Amazon promoted the following cornerstones of keeping the tension alive (USA Today, 2017): (i) 'stay focused on customers'. The reason for this is the latent (or sometimes manifest) dissatisfaction that pushes companies to improve and rethink their business models and solutions. Customers never asked for new concepts like Amazon Prime, but after launch they liked it and voiced suggestions for improvement. (ii) 'Focus on results and not process': this issue reminds entrepreneurs and managers not to let the real targets get out of sight. Very often, process management stands at the fore of operational management and dominates other important facets of management. Just in case of exploration, too much focus on process management can go at the expense of decreasing creative tension. (iii) 'Look outside the company' – this principle opens the mind for trends in the economy and, thus, for developments around and beyond the current core business. It inspires the people to connect running trends with the things they do or they could do in the future. This may pave the way to more comprehensive exploration. (iv) 'Make decisions quickly' – German Mittelstand companies tend to think twice and thrice before decision-making and trust in the power of planning. However, volatility, uncertainty, complexity and ambiguity (the so-called 'VUCA' factors according to Bennett and Lemoine, 2014) challenge the planning logic. Sometimes decisions have to be made quickly to gather information whether a chosen track is useful or not.

Making decisions too late may lead an unavailability of options. Applying these principles can be useful to change a logic with a too strong exploitation imprint.

Institutionalized exploration fields. Institutionalization may be an irritating term when it comes to giving room for explorative purposes. Nevertheless, without any 'playground', exploration will not find a place to unfold. Figure 2 provides an overview of basic modes of collaboration with external parties to foster exploration from the viewpoint of German Mittelstand companies.

Figure 2: Inter-Firm Exploration



Source: according to Etzkovitz, 2003.

Double helix model, mode 1. The first option is about platforms for established SMEs and young startup companies to collaborate in exploration projects. This collaboration can be equity-based and, in extreme cases, imply acquisitions. In this, vein financial offices of MSEs practice asset-based portfolio management and look out for startups relevant to their (future) core business. Being short of innovation assets and drivers, it is another option for SMEs to invest in incubators and accelerators to access new technologies or business concepts. Moreover, on behalf of SMEs mediators host screenings and matching events to arrange (equity-based) partnerships. In all three cases, a sound matching opens the door for successful collaboration. There is rather broad range of reasons why SMEs could collaborate with startups to reinforce exploration. To name but a few, the following reasons reveal the usefulness from SME's point of view: a different kind of entrepreneurial spirit. a different kind of highest work motivation, access to

'young and hungry' human capital, a creative scenery as well as disruptive concepts, a potentially high pace of business development, and getting in touch with new mindsets (e.g. 'fail fast', thinking in terms of minimal viable products).

Double helix model, mode 2. This mode suggests that SMEs and startups, respectively, collaborate with universities or similar higher education institutions. Such solutions may be useful if there is considerable mutual understanding between academia and business practice that often requires experience and adaptations in collaboration. One example of this kind are the so-called 'lab structures'. Here universities host and moderate classes for practice-based learning concepts with practitioners bringing in new and relevant topics, problems or open challenges.

Triple helix. Compared to the two previous modes, governmental institutions come into play. They provide supporting infrastructure that may be beneficial to give initiatives something like a home. E.g. if exploration projects are too close to daily business, a tension between exploration and exploitation may arise that is counter-productive for the entire company. Sometimes 'green-field' projects help circumventing this problem.

Governance structures. Governance solutions relevant to this context imply predominantly two issues: first, the governance mode related to the role of hierarchy and second, the level of control. Hierarchy implies 'vertical' coordination (Williamson, 1991), i.e. governance by subordinate units that set the frame and steer exploration endeavors. Hierarchy is advantageous in terms of coordination and problematic when it comes to motivation. Motivation loss can be so strong that people part with exploration activities. Thus, it must be handled with care. As for controlling exploration endeavors, comprehensive control implies a definition of the issues, problems, ways and performance expectations of exploration projects by the respective SME. Medium control levels, however, allow the definition of issues and problems, whereas limited control is only about observing and accompanying exploration endeavors ('sitting at the table'). All these models have their (dis-)advantages. Sometimes it is better to let exploration projects flow, sometimes the opposite holds.

Whatever the final choice and blend of options may be, it is important to test and find sound ways to revitalize exploration and to make use of regional advantages. The current debate on business and startup ecosystems highlights that it could make sense to involve a higher number of actors and institutions in exploration.

For the German Mittelstand companies, this may be an important lever of future performance. Chinese SMEs walk on a quite different track, but could also benefit from a discussion of keeping exploration on a high level and aligned with exploitation.

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Part 1 Framework conditions and macro-economic analysis

E Trading Volume Effects of Corporate Press Releases. A Chance for Transnational Companies and SMEs in Germany and China? An Empirical Evidence.

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Abstract

The objectives of Financial Accounting are to provide information about entities that reflects their results and that are useful to a wide range of users in making different economic decisions. The general idea of this study is the unknown what triggers trade. And especially investors are not really sure about how information is related to trade activity.

Although there have been several studies which looked into in the interrelation between public information and traded activities on equity markets. Until now the evidence is more or less described. In this study the focus is on SMEs and also Transnational Companies. The authors try to disentangle two different types of press releases. The main research perspective here is to identify if and how these announcements do move the market and if there is systematic difference between financial statement press releases and normal press releases. The study tries to explain if there are any chances in corporate communication for SMEs and Transnational Companies in Germany and China.

Key words:

Press Releases, SME, Transnational Companies, Information

1 Introduction / Research Objective

This study bases on Data, which are about Financial Accounting and capital markets. The whole topic has received a strong reputation in recent years and has a wide range of several single issues. In general the objectives of Financial Accounting are to provide information about entities that reflects their results and that are useful to a wide range of users in making different economic decisions. The general idea of this study is that investors still don't know much about what triggers trade. And especially they are not really sure about how information is related to trade activity. Although there have been several studies which looked into in the interrelation between public information and traded activities on equity markets. Until now the evidence is more or less described. What is adding here is a deeper look into a subset of firms and a try to disentangle two different types of press releases. And also especially, it is interesting to see how investors react on press releases of SMEs and Transnational Companies in Germany and China. The first type of press release would be the normal press release about the corporate activities what are about product announcements or marketing announcements or other issues related to the firms activities. The second group of press releases are press releases which are clearly related to financial accountings matters, e.g. earnings announcements, press releases about balance sheet figures, the balance sheet news etc.

The main research perspective here is to identify

- a. If and how these announcements do move the market and
- b. if there is systematic difference between financial statement press releases and normal press releases.

In general, the main intention is to find out weather the capital market do use information and if there is any impact on the capital market. In empirical terms that means the independent variable are the different types of press releases and the dependent variable is the trade volume on the market.

2 Research Area

The research area is separated into four big blocks:

1. In the first large block in the point of view are trading volumes effects of financial-accounting-information. The general idea is to examine the question whether the capital market uses the information from the financial-accounting. The best known studies are from Beaver (1968), Ball & Brown (1968). We have also some recent findings from Chan (2003), Taffler (2004) and Bamber/Barron/Stevens (2011).
2. In the second block the focus is on research activities that deal with the capital market relevance of accounting ratios. Here is examined wheather the firms financial-accounting-performance is generally reflected on the capital market. The best known studies are from Oppong (1980), Foster/Jenkins/Vickrey (1986) and Watts/Zimmermann (1986), Kiger (2007) and Ball (2010).
3. The third block includes studies examining the role of financial intermediaries. This is about the relevance of financial analysts, banks, investment companies and venture capital funds. Vergoossen (1983), Olbert (1994), Barker (1998), Clatworthy (2005) and Gassen/Schwedler (2010) are best known.
4. And in the fourth block scientists are concerned with the question of whether there are Financial Accounting information whichs reflect the values of the shares correctly, that means if money can earned with Financial Accounting in the Capital Market. The following studies are worth mentioning: Fama (1970), Beaver / Clarke / Wright (1979, Ball/Kothari (1991) and Chamber / Penman (1984) and Ball/Chivakumar (2008).

This study is assigned to the first block because it is about trading volume effects of press releases with a focus on SMEs and transnational companies.

3 Data Set

The Sample

The sample consists of 23 publicly traded Northern German firms, which are not only SMEs but also transnational companies:

Firm	Total number of press releases Q3/2015-Q1/2017	Of which are financial accounting related
Adler	5	2
Alstria	11	5
Asian Bamboo	5	2
Aurubis	9	5
Beiersdorf	9	1
Bijou Brigitte	8	4
Capital Stage	8	2
Colexon	5	2
Deutsche Euroshop	9	6
Evotec	9	2
Fast Casualwear	11	5
HHLA	7	2
Joyou	8	1
Jungheinrich	7	1
Lloyd Fonds	11	3
Lotto24	11	2
SinnerSchrader	10	7
Tag Immobilien	9	2
Tom Tailor	8	3
UMS	3	0
VK Mühlen	7	3
VTG	10	3
Xing	4	1
Total	184	64

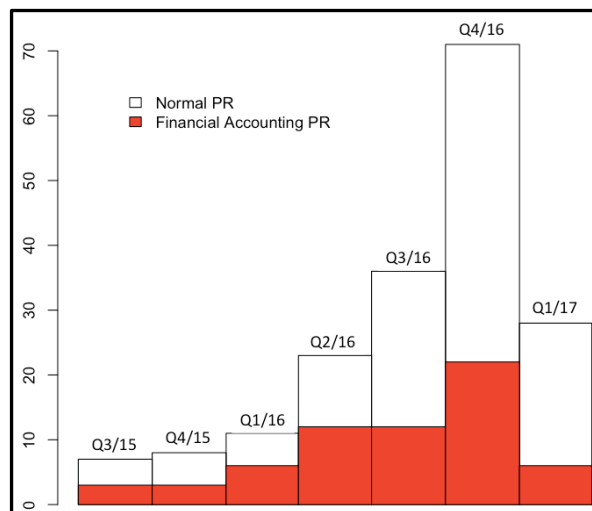
For these firms press releases were collected by using the homepages of these firms where press releases normally always stored and registered. The collected data focused beginning of the 3rd quarter of 2016 up to the first quarter of 2017. For these 23 firms the researchers were able to identify a total number of 184 press releases and out of these 184 press releases, 64 press releases were characterized as financial accounting press releases.

For example: Beiersdorf AG published on 08.01.2017 the press releases that the Beiersdorf logo gets a new design. This information is a normal press releases

which is not relevant to financial accounting information. But on 04.03.2017, however, the Beiersdorf AG announced its financial results for the fiscal year 2016. This is a information which is classified as financial accounting related.

Histogram Chart

On this histogram chart the frequency of the collected press releases are shown, broken up for each quarter of the study.

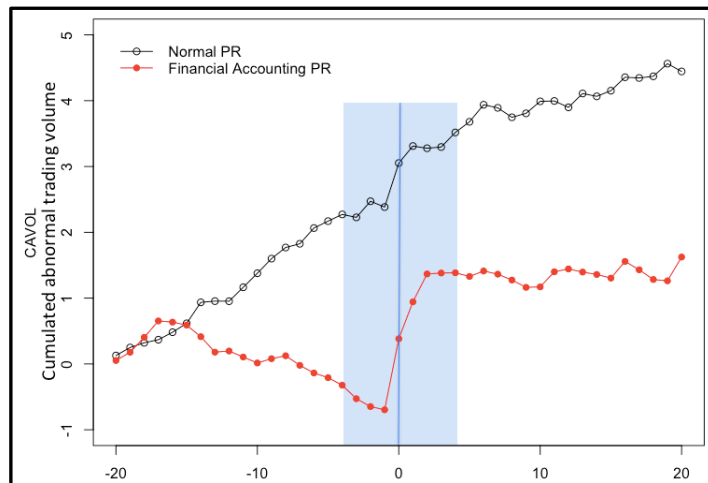


There is a clear pattern in terms that most of the press releases identified were located in the year of 2016. It might be that there are some time-bys in a sense that the researchers were able to identify more current press releases with a higher frequency than older press releases. That might be driven by the data collection procedure. The white bars indicate the overall frequency of press releases. The red bars indicate the financial accounting press releases. In general there is no clear time discrimination between financial accounting press releases and normal press releases. The distribution across time seems to be comparable.

There seems to be a little bit higher frequency of financial accounting press releases around Q1 and Q2. That will be in line with normally the annual press conferences for the financial statements, happen to fall within the second quarter of publicly traded firms.

4 Test Results

This is the average abnormal trading volume around a press release.



Then the researchers calculated event days. The event date is that date the actual press release is disclosed which is shown on the horizontal axis around the number zero. Zero would be the event date. And then there are 20 trading days prior to the event date and the end 20 trading days after the event date.

On the vertical axis is the cumulated abnormal trading volume (CAVOL), which is measured as the firm level trading volume relative to the average trading volume. The basic intuition what this graph is the distribution of abnormal trading activity across event time separately for normal press releases and for financial accounting press releases.

For normal press releases (black line with the hollow circles) over the event time there seems to be abnormal trading activity. Especially prior to the event but also around the event these cumulated abnormal volume increases. If there would be nothing going on it should be around zero (slightly increasing over time) but that

be around zero. Here it is increasing over time and its also increasing around zero.

What this indicates is, that there seems to be an overtrading activity around normal press releases. And there seems to be a little bit of a spike of this trading activity around zero. But in general for a normal press release it seems as if there is quite substantial trading activity also prior to the actual press release.

In comparison the financial accounting press releases there see no abnormal trading activity prior to the event. And than there is a very pronounced and very economically significant trading activity around the event – so conceptionally starting 1 day prior ending more or less 2 days after the event. So the actual trading activity is really centered on day 0, day 1 and day 2. Post these 3-days-time-spent there again is no abnormal trading activity.

Cumulated abnormal volume test results

Sample CAVOL	Pre (-20;-1)	Event (0;2)	Post (3;20)	Total (-20;20)
No Event	0.751 (-0.911)	0.097 (-0.422)	0.698 (-0.771)	1.377 (-0.607)
All PR	1.360 (-0.236)	1.215*** (0.179)***	0.394 (-1.138)	3.424* (-0.103)
Normal PR	2.460 (0.129)	0.817 (-0.108)	0.446 (-1.093)	4.444 (-0.356)
Financial Accounting PR	-0.670** (-0.746)	1.961* (0.876)*	0.303 (-1.420)	1.624 (0.633)

The cumulated abnormal volume (CAVOL) is based on firm-level daily share trading relative to the average firm-level daily trading over a 40 trading day period centered around the 40 trading day event window. The table reports sample arithmetic means above and medians below in brackets. Test results are based on Welch two sample t-tests for means and continuity corrected Wilcoxon rank sum tests for medians.
 ***/**/* indicates two-sided significance at the 1%/5%/10 % level, respectively.

The first two rows on this table shows the test results for the general press releases sample, labeled as ALL PR, relative to the NO EVENT control window, firms that have no particular event. The PRE EVENT numbers have in general a larger mean.

Around the actual event or around the press release announcement there is a highly significant and also economically sizeable abnormal trading activity. To interpret this number 1.215, this number indicates that around these 3 days abnormal trading activity is just around the 1.2 times the normal trading activity of a normal day. So that would indicate that over these 3 days these firms tend to trade like one extra day. This also translates over the 40 day traded window. So over the 40 days the average abnormal mean is 3.4 indicating that over the 40-days period its like 3.5 extra trading days. That means press releases in general are related to abnormal market activities or abnormal trading activities. In other words these press releases generate liquidity. The numbers of interest here are highlighted in blue.

The numbers highlighted in red, what is shown here is that financial accounting press releases are different from normal press releases among the dimensions. That seems that financial accounting press releases don't course abnormal trading activities prior to the event. When it comes to the event the financial accounting press releases seem to be related to a larger abnormal trading activity around the event. So this is indicated by this measure of 1.9 for the mean indicated that around the event financial accounting press releases trigger more abnormal turnover than normal press releases.

5 Conclusion

The interpretation of the results in economic terms means, Press releases are related to abnormal market activities in a sense that press releases cause trading. This is not that surprising but it is still important to see that these results are also relevant to SMEs and transnational Companies.

The next thing and that what is interesting especially from financial accounting and controlling perspective. There are trading effects of the press releases and they are systematically with the type of press release. When there are financial accounting press releases

- a. First of all: There is no pre-event trading activity which you observed for normal press releases.
- b. And second: The actual trading activity is very much centered on the event time. So it means financial accounting press release is really directly linked in very short notice on the trading activities.

Although this study is a very small scale study but by comparing that results with large scale studies the results are comparable. This is a typical study which investigates financial accounting information and its impact on capital markets relative to other information sources.

And it seems interesting to see that financial accounting is one out of many information sources and that it has specific attributes which make it different from other information sources, which is also good to know. Also it is very interesting to see that all that is comparable with the SMEs and Transnational Companies in Germany and China.

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Part 1 Framework conditions and macro-economic analysis

F China's One Belt One Road Initiative - Opportunities for SMEs

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Abstract

One Belt One Road is a Chinese initiative on a regional infrastructure investment program designed to open-up new trade routes, markets and energy sources in Asia, Africa and Europe, connecting the earth and water of Eurasia like a belt. 65 countries in Asia, Europe and Africa are addressed in the program, representing 62% of the world's population and 30% of the world's GDP. The total investment volume of the One Belt One Road is approximately US\$900 billion. By 2030, only Asia Pacific will have an infrastructure investment demand of US\$23 trillion from which large-scale companies, but also for small and medium-sized enterprises could profit. SMEs will mainly participate in the One Belt One Road initiative as subcontractors of large companies. SMEs, however, will also gain from the OBOR initiative as providers of intermediate inputs for the final products sold by the large companies.

Key words:

One Belt One Road initiative, SME, Globalization

JEL-Classification:

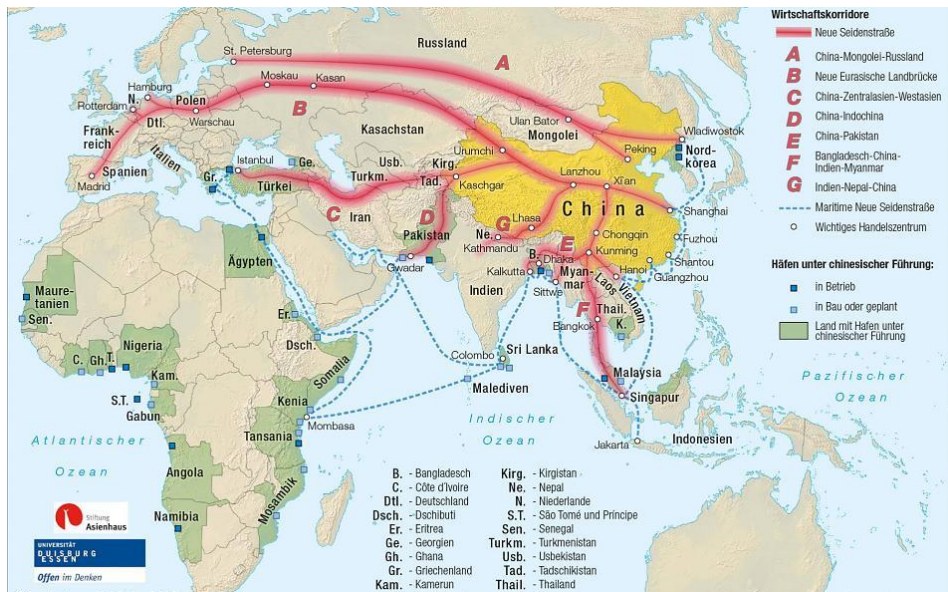
F23, F63, L25

1 One Belt One Road – The new Silk Road

The ancient Silk Road is a 6400km long network of caravan routes whose main route connected the Mediterranean by land via Central Asia with East Asia. Silk was traded to the West, wool, gold and silver to the East. The Silk Road, however, was not only effective for trade, but also for the exchange of ideas. E.g., the influence of Buddhism took this route from India to China.

The New Silk Road, the One Belt One Road (OBOR) initiative (Figure 1) is an infrastructure investment program initiated by China to open-up new trade routes, markets and energy sources in Asia, Africa and Europe, which, like a belt, will connect the land and water masses of Eurasia. It will connect 65 countries in Asia, Europe and Africa with a variety of projects across seven Silk Road Economic Belts and the 21st Century Maritime Silk Road routes. The total investment volume in all OBOR countries is estimated US\$900 billion (PricewaterhouseCoopers, 2017)

Figure 1: The Silk Road Economic Belt and the 21st-Century Maritime Silk Road (One Belt One Road)



Source: Stiftung Asienhaus und Universität Duisburg-Essen (2016).

The objectives of the initiative are to promote globalization and increase exports, increase China's economic influence along the Silk Road, to promote the development of Northwest China (Xinjiang, Ningxia, Gansu, Shaanxi, Inner Mongolia), northeast (Heilongjiang, Jilin and Liaoning) and Southwest China (Guangxi, Tibet, Yunnan) and the rest of the country through transport, energy and IT infrastructure projects, securing political stability and peace through international trade, exchanging culture and experience.

The OBOR initiative was announced in 2013 by President Xi Jinping and included in the 13th Five-Year Plan (2016-2020) in 2016. Table 1 shows its main milestones.

Table 1: Main milestones of the One Belt One Road (OBOR) initiative

Year	Month	Milestone
2013	September	Xi Jinping announces Silk Road Economic Belt for the first time
	October	Xi Jinping announces Maritime Silk Road for the first time
2014	March-April	First mention of the Silk Road economic belt of Xi Jinping on a visit to Europe (Germany and Belgium)
2015	March	China publishes action plan for OBOR
	June	Signing of the agreement with the Asian Infrastructure Investment Bank (AIIB) based in Beijing
	September	EU-China agree to build a Connectivity Platform
	October	OBOR sponsored by Xi during a visit to the UK
2016	March	OBOR of being integrated into the 13 th Five Year Plan
	June	OBOR sponsored by Xi on visits to Serbia and Poland
2017	May	Belt & Road Forum for International Cooperation in Beijing with 29 Heads of State and Government Representatives from 130 Countries.

Source: European Think-Tank Network on China (2016), own sources.

In May 2017, the Beijing Belt & Road Forum for International Cooperation took place in Beijing with 29 heads of state and government representatives from 130 countries. Commercial contracts were signed in the amount of approximately US\$275 billion (Table 2).

Table 2: MoUs signed on the Belt & Road Forum in May 2017

<i>Country</i>	<i>Project MoU</i>	<i>Bn US\$</i>	<i>Chinese enterprise</i>	<i>Counterpart</i>
Pakistan	Four hydropower projects along Indus River	50.0	-	-
Pakistan	Diamer-Bhasha Dam	12.0	-	-
Malaysia	2 nd phase of East Coast Railway	2.1	CCCC	Malayan Railways Limited
Philippines	Pulangi V 250MW Hydro-power Plant	10.0	CEEC	Pulangi Hydro Power Corporation
Timor-Leste	-	0.7	CRCC's key competitor	Government of Timor-Leste
Bangladesh	Digital Connectivity Project	0.7	CRCC's key competitor	Government of Bangladesh
Russia	Western Europe-Western China Highway	80.0	CCCC	Russian Highways State Company
Kazakhstan	2 nd phase of Astana Light Metro	2.2	CRCC's key competitor	Local government of Astana
Saudi Arabia	Yanbu 5x660MW oil-fired plant	4.0	PowerChina	Saline Water Conversion Corp
Saudi Arabia	Energy projects	2.0	Norinco	-
Serbia	Belgrade industrials park and highway	7.4	CCCC	Government of Serbia
Serbia	Two highways	14.8	CCCC	Government of Serbia
Ethiopia	Transport projects	3.0	CCCC	Government of Ethiopia
Ethiopia	Dire Dawa Industrials park and highway	5.0	CRCC	Government of Ethiopia
Others	-	80.0	-	-
Total (US\$)	-	274.0	-	-

Source: Chua (2017). CCCC = China Communications Construction Company, CRCC = China Railway Construction Corporation.

The investment volume of the initiative of all One Belt One Road states amounts to approx. US\$900 billion. Financial sources in China are, among others, the State Silk Road Fund (2015: US\$40 billion), the China Development Bank (US\$37 billion in 2017), and the Export and Import Bank of China (US\$20 billion in 2017). Infrastructure investment support was also given by the Asian Infrastructure Investment Bank (AIIB). In 2016, it was US\$1.7 billion.

The initiative's planned infrastructure investments are particularly in the following areas:

- **Transport infrastructure:** roads, bridges, harbors, railways, etc.
- **Energy infrastructure:** oil and gas pipelines, cross-border power grids, investment in hydropower, nuclear, wind, solar and other renewable energy sources, promoting cooperation in the processing and transformation of energy and resources at or near sites where they are used to create an integrated industrial chain of energy and resource co-operation.
- **Information infrastructure:** cross-border optical and fiber optic networks, transcontinental optical submarine cables, etc.

Examples of infrastructure investments include the US\$46 billion corridor between China and Pakistan (port facilities, pipelines, roads), the 3,000km high-speed line between China and Singapore, and gas pipelines in Central Asia.

2 Infrastructure investment demand in Asia

Asia is one of the fastest growing regions in the world. It rapid economic growth in requires and induces large investments in transport, energy and information technology infrastructure.

According to the Asian Development Bank (ADB, 2017), in the Asia Pacific region, there is an infrastructure investment demand of \$22.5 trillion between 2016 and 2030 (Table 3), of which 61.1% or about US\$13,7 trillion in East Asia. A major part of this infrastructure investment demand will be in China.

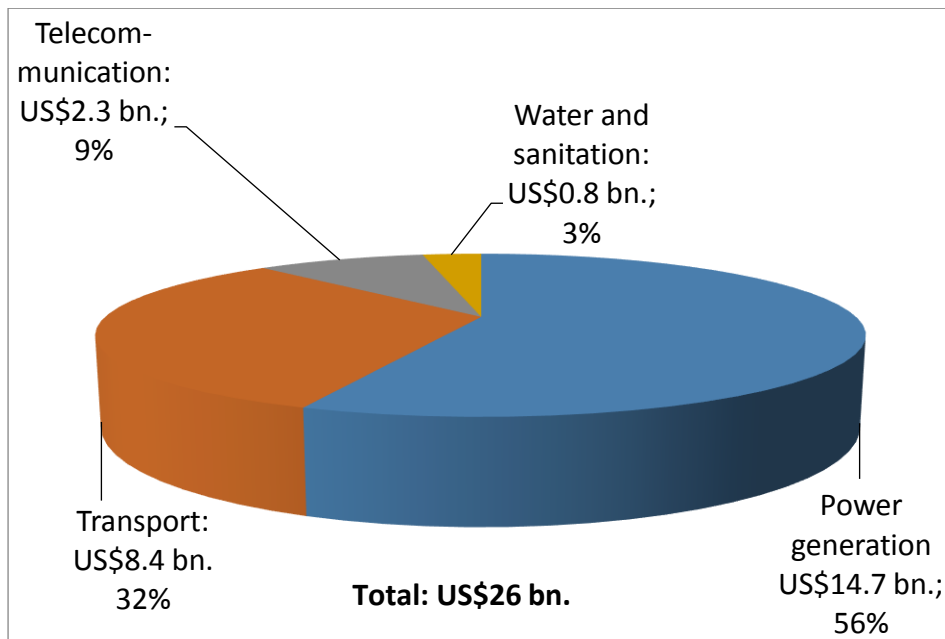
Table 3: Regional infrastructure investment demand in Asia-Pacific (2016-2030, in bn. US\$)

<i>Region</i>	<i>Investment demand (2016-2030, bn US\$)</i>	<i>Annual investment demand (bn. US\$)</i>	<i>Share of GDP (%)</i>
Central Asia	492	33	6.8
East Asia	13,781	919	4.5
South Asia	5,477	365	7.6
South-East Asia	2,759	184	5.0
Pacific	42	2,8	8.2
Total Asia-Pacific	22,551	1,503	5.1

Source: ADB (2017).

Sectorally, the infrastructure investment demand in Asia Pacific is also very diverse. According to ADB (2017), in 2016, the demand for power generation was US\$14.7 bn, for transport US\$14.7 bn, for telecommunication US\$2.3 bn and for water and sanitation US\$0.8 bn (Figure 2).

Figure 2: Sectoral investment demand in Asia-Pacific (2016, in bn. US\$ and %)



Source: ADB (2017).

In these sectors, large enterprises, but also small and medium-sized enterprises can sell their products and provide their services. Some investments of the OBOR projects will be in the EU member states, most of the investments will be in Asia. The cooperation of the One Belt One Road Initiative with the EU is taking place, in particular, within the framework of the "EU-China Connectivity Platform".

3 Cooperation of the One Belt, One Road initiative with the EU

Goals of the "EU-China Connectivity Platform" are, inter alia, promoting synergies between the One Belt, One Road initiative in China and the EU's connectivity initiatives (TEN-T policy) and promoting cooperation on infrastructure, equipment, technologies and standards. The most important area of cooperation based on the EU-China Connectivity Platform is in the following areas (telecompaper, 2015):

- Joint development and promotion of mobile technologies for 5G, cooperation with China on the advanced European digital infrastructure, in particular in the context of the new €315 billion EU investment plan targeting the strategic infrastructures of the 21st Century.
- Increased cooperation on Smart Cities, Smart Energy and the Internet of Things.
- Establish a high-level task force to identify concrete new opportunities for European companies in China and Chinese companies in Europe in areas such as hi-tech innovation, e-commerce, online services, cloud services, big data.
- Establishment of large investment finance and incentives focusing on the creation of high-tech startups and collaborative innovation in Europe and China.

4 Opportunities for the participation of national and international enterprises in the OBOR projects including SMEs in Asia

The One Belt One Road initiative will provide considerable opportunities for large scale companies, but also for small and medium-sized enterprises in Asia.

Table 4: Planned projects or projects under construction of the One Belt One Road initiative in Asia (2017)

<i>Sector</i>	<i>Planned projects or projects under construction</i>
High-speed train connections	<ul style="list-style-type: none"> • Eurasia Rail • Central Asia Rail • Pan-Asia Rail
Transport infrastructure	<ul style="list-style-type: none"> • Improvement of the Indian railway network • Construction of the port in Colombo
Oil and gas pipelines	<ul style="list-style-type: none"> • Central Asia-China gas-pipeline Line D • West-East Gas Pipeline III, IV und V • China-Russia East Route and West Route natural gas pipeline
Telecommunication and energy	<ul style="list-style-type: none"> • Optical cable connection Myanmar-China, Tajikistan -China and Pakistan-China • Optical submarine cables in Southeast Asia • Power transmission networks Russia-China

Source: Chua (2017).

Table 4 shows currently planned projects or projects under construction of the One Belt One Road initiative in Asia. Large projects are planned in the sectors of high-speed train connections, transport infrastructure, oil and gas pipelines as well as telecommunication and energy.

These projects will be implemented by large enterprises from China like CCCC (China Communications Construction Company) or CRCC (China Railway Construction Corporation) and international companies such as Siemens, General Electric or Mitsubishi. Small and medium-sized enterprises will also participate

directly, mainly as subcontractors. Some medium-sized companies are world market leaders in niches of the manufacturing sector and can obtain large-scale projects. Indirectly, SMEs will profit from the One Belt One Road initiative as providers of intermediate inputs for the final products sold by the large companies. A detailed input-output analysis could reveal quantitative results in this respect and could be a next step of research.

5 Summary

The New Silk Road (One Belt One Road) is a China-initiated infrastructure investment program designed to open-up new trade routes, markets and energy sources in Asia, Africa and Europe, connecting the earth and water of Eurasia like a belt. 65 countries in Asia, Europe and Africa are addressed in the program, representing 62% of the world's population and 30% of the world's GDP. The total investment volume of the One Belt One Road is approximately US\$900 billion from all participating states. Examples of OBOR projects include the economic corridor between China and Pakistan, the 3,000km high-speed line between China and Singapore, or gas pipelines in Central Asia

In China, the program is mainly financed by state-owned banks. The newly established Asian Infrastructure Investment Bank also supports infrastructure projects in Asia. Aims of the OBOR initiative is to promote globalization in Eurasia and Africa through transport, energy and IT infrastructure projects. It also aims at ensuring political stability and peace through international trade, but also to underline China's international leadership role. The establishment of the Asian Infrastructure Investment Bank served this purpose. Cooperation with the EU is taking place in particular within the framework of the EU-China Connectivity Platform.

By 2030, there will be an infrastructure investment requirement of US\$23 trillion in Asia-Pacific, which could also result in sales opportunities for large-scale companies, but also for small and medium-sized enterprises. SMEs will mainly participate in the One Belt One Road initiative as subcontractors of large companies. SMEs, however, will also profit from the OBOR initiative as providers of intermediate inputs for the final products sold by the large companies.

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Part 2 Sectoral Analysis

G Enterprise relationship of food industry cluster from the perspective of Ecology

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Abstract

With the continuous development of food industrial clusters, there are many problems in the clusters, such as the proliferation of homogeneous enterprises and products, the lack of organic links and symbiosis between enterprises, resource depletion and environmental degradation, and all these problems triggered niche overlap and vicious competition. In this paper, we take the livestock and poultry industry cluster as study object, and use niche theory to analyze enterprise niche inclusion, overlap and separation of the relationship.

Key words: Niche Theory; Food Industry Cluster; Competition; Cooperation

1 Introduction

Food industry cluster is composed with plenty of units, which lies in a specific geographical scope and in a particular way to rally around close neighboring communities, including government agencies, intermediary organizations, and research institutions, small and medium-sized enterprises producing food and related products and other social economic groups. In the industrial cluster, the enterprises can share the professional infrastructure, labor market and service. Relations among these units are complicated, such as complementary, cooperation, and even competing. For the important of food safety, Chinese government pays much attention to food industry development. “The 13th Five-Year Plan” of food industry and “No.1 File of 2017” clearly proposed to accelerate food industry cluster, to promote the food industry to be intensive, large-scale, so as to form a rational layout, resource conservation, modern food industry cluster. The government encourages food enterprises to strengthen cooperation and actively extend to the upstream and downstream, from the establishment of raw materials from the production of all aspects to the end of the whole industry chain. Promote the effective convergence of all aspects, to speed up the integration between the industrial chain integration, to achieve complementary advantages, information sharing, and coordinating development.

Under the guidance of government policy, most local government in China actively promotes the demonstration of food industry cluster or food park construction. And many large-scale, high levels modern food Industry Parks have been founded, such as Shandong Laiyang Food Industry Park, Chongqing Qijiang Food Industry Park, Chuzhou Green Food Industry Park and so on. At the same time, some districts are greed during food industry cluster construction, and there are some errors in their investment philosophy, leading to too much homogeneous enterprises within the cluster, and serious product homogeneity. And the lack of organic links and symbiotic relationship among enterprises within a food park, leading to depletion of resources and industrial environment deterioration, causing niche overlap and vicious competition and other issues. In particular, with the development of modern livestock production technology, animal husbandry, slaughtering, processing and logistics and other aspects is gradual getting intensive, large-scale. The fecal discharge and environmental pollution problems are becoming more and more serious, which has become a serious challenge to build a new socialist countryside and realize the coordinated development of economy and environment. In some districts, the food industry cluster has emerged the phenomena of lack of competition and excessive competition coexist, which

caused the industrial cluster competitive power and innovation power is seriously inadequate, cooperation mechanism greatly reduced.

Therefore, in the food industry cluster development and upgrading process, too much competition occurs in horizontal enterprises, and lack of cooperation among vertical enterprises. In the process of industrial operation, the regionalism, incompleteness and imbalance of the competition among enterprises and the inequality of the subject status are the key problems in the development of food industry cluster.

Food industry cluster is a life-like organic whole, it has the life characteristics from emerge, development, maturity, and even to recession or other evolution. And all these behaviors are not only impacted or constrained by the environment, but also have some feedback on the environment. So the food industry cluster has obvious Ecological characteristics. Our research is to regard the food industry cluster as a natural biological community, by using niche theory, we will analyze the niche of each unit, so as to make every enterprise in the cluster can find its own position, and all enterprises within a food park can form a "food industry ecological community". We will take the food industry park lifecycle as research object, and carry out study from its original status of less competition to the intermediate status of excessive competition and to the final status of coexistence. We will integrate niche theory to build industrial clusters collaborative evolution and sustainable development model.

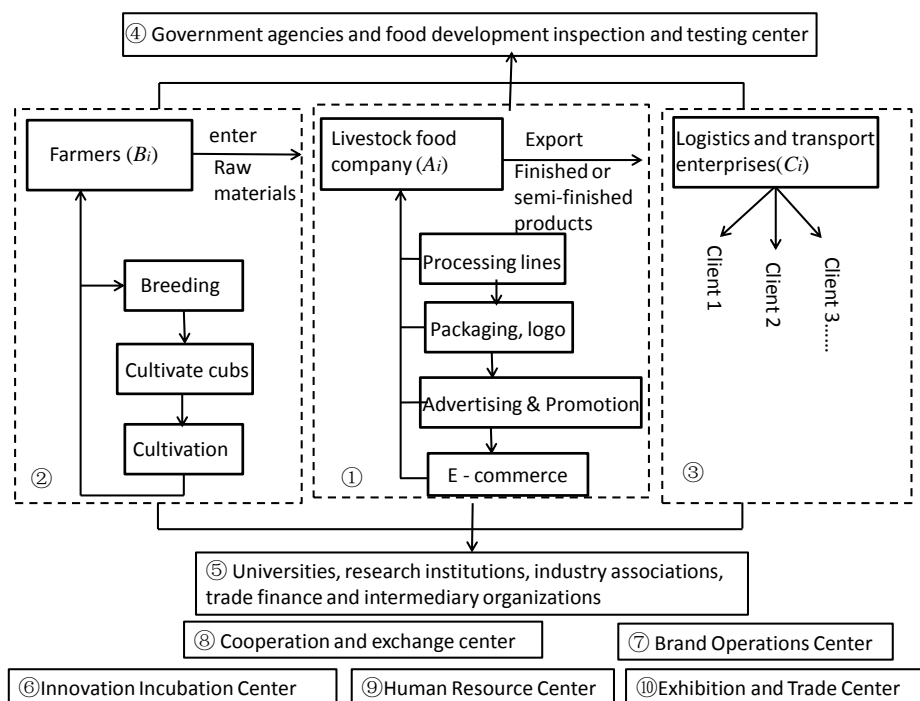
2 Cooperation and Competition among Enterprises in Food Industry Cluster

Because competition and cooperation occur in different ranges and different participants, they can coexist in the same industry cluster. Therefore, proper scale competitions among enterprises in one industry cluster provide both incentives and avoid excessive competition (Porter, 1998). It can be seen that the observation of competition and cooperation in industrial clusters is based on two different perspectives of homogeneous enterprises and heterogeneous enterprises.

The competition among leading large enterprises in one industry cluster shows the greatest impact and the most obvious performance of the cluster, especially in the cluster supply chain enterprises. So, competition among leading large enterprises can be very intuitive to reflect the strong competition among them, and its heterogeneous enterprises in the cluster of mutual cooperation among the close cooperation. Because the core enterprise appears in industry cluster, especially co-existence of multiple core enterprises, the industry cluster forms a cluster supply chain, which is driven by core enterprises and a large number of collaborative enterprises co-exist parallel organization.

As shown in Figure 1, livestock and poultry industry is the group that builds around the adjacent neighborhood residents in a specific geographical scope, including government departments, intermediary organizations, scientific research institutions, large-scale production of livestock and related products related to small and medium enterprises in a specific way. The focus of this paper is mainly on the core of animal husbandry and food industry cluster, which are shown as ①, ②, ③ part in the figure. The animal husbandry food enterprises in this article is represented by A_i ($i=1, 2, \dots$). Farmers or agricultural cooperatives, who provide raw materials for processing is represented by B_i ($i=1, 2, \dots$), and Logistics and transport enterprises are represented by C_i ($i=1, 2, \dots$). Besides that, government agencies and food development center, inspection and testing and certification center, checking each process of product, internationally renowned third-party testing and certification bodies, to carry out international testing and certification services, universities, research institutions, associations, trade finance and intermediary organizations, providing product innovation and enterprise financing to provide support and help, and display trading center, innovation incubator center, brand operations center, cooperation and exchange center, human resources center around the cluster, providing technical and service support, all of these mentioned units are represented by D_i ($i=1, 2, \dots$).

Figure 1: schematic diagram of livestock food industry cluster



With the continuous development of China's food industry cluster over the past decades, combined with the above research shows that in a relatively mature food industry cluster, there will be one or more core enterprises drive the development of other enterprises within the cluster. The following analysis is for the livestock and poultry industry cluster has two or more core enterprises situation. At the same time, due to animal husbandry food with preservation, durability characteristics, its requirements are extremely high for logistics and transportation industry. Considering the highest correlation between the two, mainly take logistics enterprises as an example.

According to existing research, the competition in the animal husbandry and food cluster can be divided into three kinds: ① competition between core enterprises; ② competition between core enterprises and related enterprises; ③ Competition among related enterprises (mainly small and medium enterprises). Corresponding cooperation can also be divided into three kinds: ① cooperation between the

core enterprises; ② core business and related business cooperation; ③ related enterprises (mainly refers to the small and medium enterprises) competition.

Figure 2: Competition and cooperation among enterprises

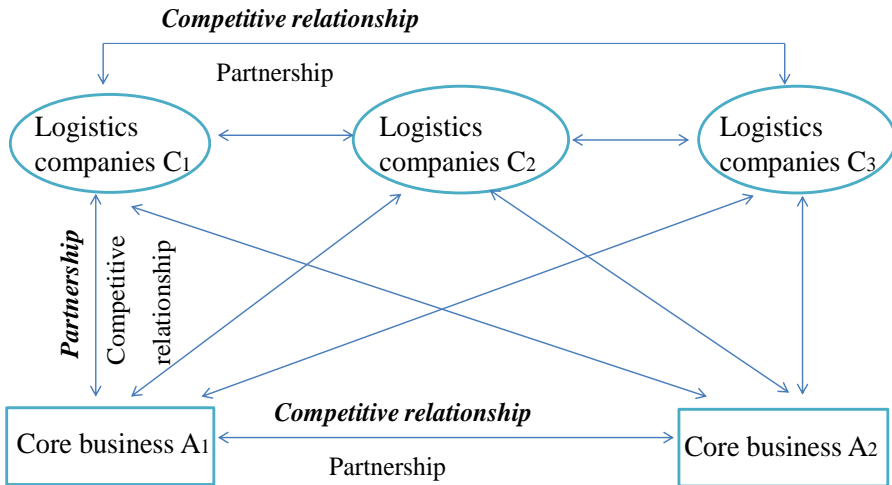


Figure 2 shows that a variety of enterprises among the competition and cooperation diagram in a livestock and poultry industry cluster, the core business A1, A2, logistics enterprises C1, C2, C3. It can be seen that competition and cooperation exist at the same time, however there might have a leading role between the two (the bold font means the dominant role of the two relations).

In food industry cluster, the interaction among enterprises is more obvious, and becomes a staggered network structure. This can be seen easily from Figure 2 that the competition is dominated by the core enterprises A1 and A2, and between the enterprises C1 and C2 (or C1 and C2, C2 and C3, C3 and C1). Mainly due to the geographical distance is close between the core industries in the industrial clusters, more widely access to other information channels, the spread faster news, basically rely on the same geographical market, therefore the market share, product type, business publicity, management, culture and above than the general competition of enterprises are more comparable. At the same time, the two do not rule out cooperation, such as animal husbandry fresh food enterprises share cold storage, but this is a few cases. However as to cooperation, it clearly exists obviously between the core business and related enterprises, such as the core business A1 and logistics enterprises C1. The main relationship between

competition and cooperation in industrial clusters can be summarized as the competition of homogeneous enterprises is greater than that of cooperation, and the cooperation of heterogeneous enterprises is greater than that of competition.

It is necessary for enterprises to give full play to their own core competitiveness, especially the core competitiveness built by a lot of money and manpower, with some other business obtained from the relevant enterprises through outsourcing and other means, making the whole production process more efficient. That is why the core business and related enterprises reached a long-term cooperation consensus. But in practice, not every food cluster in the competing relations are the same as the theoretical analysis, there are still some situations cannot be ignored, especially obvious vicious competition and lack of competition.

As shown in Figure 2, when enterprise A1, A2 are seeking logistics cooperation, if core companies in a food cluster is lack of competition (the core business is in a downturn and the demand for related businesses is reduced), it will lead to logistics enterprises C1, C2, C3 in a state of excessive competition. This is what the core business wants to see. In this case, it becomes the "core business market", means that the dominant power is in the hands of the core business, and related enterprises over-competition can give the core business A1, A2 bring lower transaction costs, but not conducive to the logistics enterprises C1, C2, C3 long-term development; If there is an excessive competition between the core business A1 and A2 (core business development is rapid, strong demand for related business), the logistics enterprises C1, C2, C3 have more opportunities to observe cooperation conditions offered by A1 and A2, and choose the most optimized to cooperate. In this case, it becomes the "relevant business market", means that the dominant power is in the hands of the related enterprises. Such a situation can give logistics enterprises C1, C2, C3 bring more benefits, and the core business is certainly to be affected to varying degrees in excessive competition.

3 Niche analysis of enterprise relationship in animal husbandry food industry cluster

Niche theory is an important theoretical concept of modern ecology. Johnson (1910) was the first person who used the word "niche". And then Grinnell (1917), Elton (1927), Hutchinson (1957), Odum (1959), Pianka (1983) and other famous scholars have been committed to the niche analysis and explore. The niche theory can be summarized into three main points: position, function and the relation of species. One of the most critical points is that species in each species spatial position to a stable adaptation. In addition it also has the function of and contact with other species. In the course of the study, scholars have given them specific numerical indicators such as niche breadth, niche overlap, niche size, and niche dimensions.

With the continuous application of niche theory in the enterprise economy, a number of domestic scholars have formed their own niche theory. Enterprise niche is the part of resources and space that can be obtained and utilized by the enterprise in the whole ecological resource space. It is an enterprise and even an industry, in the enterprise ecological environment has a definite position. The niche of the enterprise in the industry is the sign of the competitive strength of the enterprise in the industry (Liang Jiahua, Ge Zhenzhong, et al., 2002). It is the specific market position, location and function status of an enterprise associated with other enterprises (Lin Xiao, 2003). In the enterprise niche, enterprise in a certain market environment occupies a certain position and plays a role similar to the concept of "market orientation". But it has more ecological connotations than "market positioning" (Xu Fang, Li Jianhua, 2005). Enterprise niche refers to the relative position and function of enterprise in a certain period in the specific ecological environment actively and the environment and other enterprises in the process of interaction form (Yan An, DaQingli, 2005).

The niche of food cluster can be interpreted as that different types of food enterprises have their own stable position in the cluster. The position of each enterprise embodies its comprehensive strength in the industry. In daily production, food enterprises keep close contact with related enterprises in a particular cluster ecological environment, and give full play to their important functions in the cluster, and interact with each other.

By referring to the domestic and foreign scholars' research on niche theory and expanding the result, we can describe the abstract cluster enterprise relationship by the quantitative index mentioned above. Here mainly focus on three aspects. First, the competition between enterprises in the cluster can be expressed as niche overlap. Second, cooperation among enterprises within the cluster can be

expressed as the compensation of niche. Third, symbiosis among enterprises in the cluster can be expressed as the equilibrium of neutral theory (the third point will be analyzed in the next section).

Since the research object is defined as the food industry cluster, the breadth of enterprise niche can be understood as the total demand for the market resources of food enterprises. This indirectly reflects the competitive level of the food enterprises in the competition. If the resources of a food enterprise are more abundant, the niche wider, and the more generalization of the ecological niche, that's means the greater the possibilities of niche overlap. On the contrary, the niche of a food enterprise is narrower, and its niche is more specialized, which shows that the niche overlap is less likely. The above law can be divided into three types as shown below.

Figure 3: Sketch map of niche types

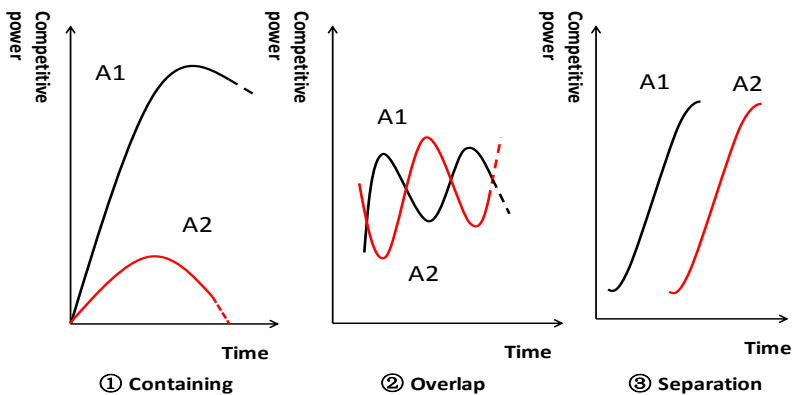


Figure 3 shows the Enterprises A1 and A2 in the animal husbandry and food industry. The above three types indicate respectively. ① containing: With the passage of time, the survival of the fittest, the enterprise A1 gradually gain higher competitiveness, gradually eliminate the enterprise A2. (It can be viewed as a special case of overlap, or indirectly as a result of the lack of competition in the enterprise A2.) ② Overlap: This situation shows that competition exists among enterprises, and enterprises A1 and A2 rise alternately in competition. ③ Separation: it shows that cooperation or symbiosis exists between enterprise A1 and

A2. The two ecological niches are parallel, increasing and decreasing, and depend on each other.

However, in the actual situation, we should not ignore the environmental factors of the enterprise, and the related objects should also be considered. Here, we establish a multidimensional coordinate for analysis. In this paper assumes that there is three kinds of main food industry cluster study: the first category is the logistics oriented enterprises, set the X axis. Second is the resource oriented farmers, set to the Y axis. Third is for animal husbandry food enterprises, and it is as a production and processing oriented food enterprises, set to the Z axis.

Figure 4: Schematic diagram of enterprise's two-dimensional niche

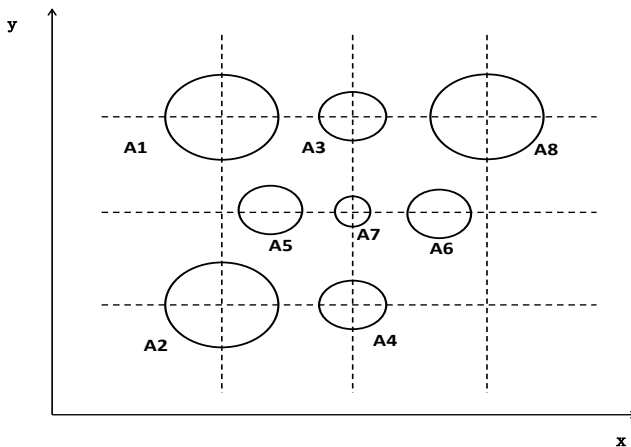
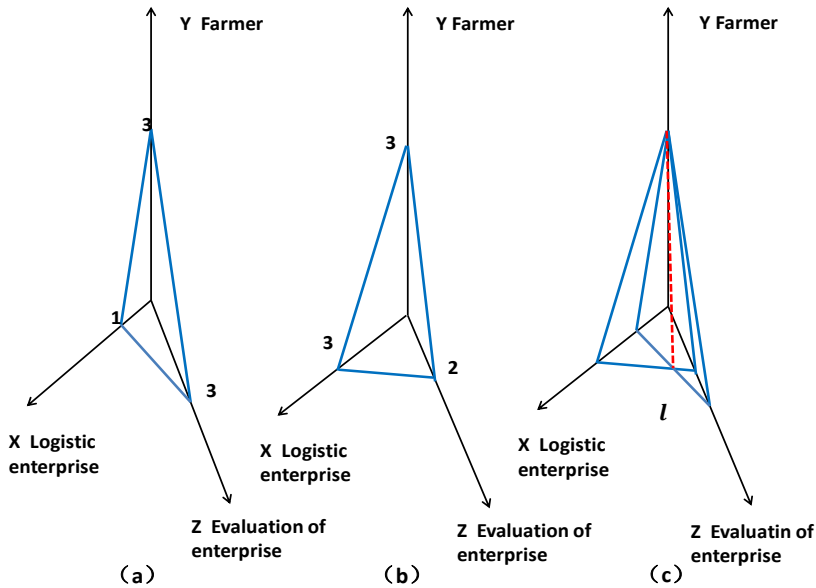


Figure 4 shows the niche of a livestock food industry in a two-dimensional perspective at different related objects. According to the graph above, we can see the direction of the X axis in terms of enterprise A2 and A4, enterprise A1, A3 and A8, and enterprise A5, A7 and A6 have the same ecological niche. In the direction of the Y axis, enterprise A1 and A2, enterprise A3, A7 and A4 have the same ecological niche. That is to say, there are differences in niche in different dimensions, so we cannot ignore the angle of view of related objects in the process of research. In order to more intuitively reflect the phenomenon of niche overlap, each research enterprise can build a three-dimensional coordinate. Here, for example, the enterprise A1 and A2 of the above diagram, build the following 3D coordinates.

Figure 5: Enterprise three-dimensional niche



In the figure 3, enterprise A1 and A2 have the same niche in the Y axis, i.e. A1 and A2 for farmers is very similar supplier. There must be a high competition between A2 and A1. Both in the Y axis are assumed to be 3. On the X axis, enterprise A1 and A2 have different ecological niche, assuming the A1 in X axis is 1, A2 is 3. The Z axis represents the enterprise's own evaluation (Of course, this evaluation needs to be adjusted after a deep understanding of the enterprises). It is assumed that A1 is 3, A2 is 2. The enterprise A1 and A2 are established in the three-dimensional space of $\Delta 133$ and $\Delta 332$. As shown in Figure 3-C, put the two triangles in the same coordinate system and intersect at the line.

This shows that an enterprise and other enterprises in the axis intersect the more line and points, the more it overlaps with other enterprises in the niche, the wider the niche and the more decentralized the enterprise. On the contrary, the more specialized the enterprise is. Similarly, farmers' competitiveness evaluation of enterprises will also affect the competitiveness of farmers, because farmers will want to cooperate with more competitive enterprises. But the enterprises that are competitive with farmers are not necessarily competitive in logistics enterprises. Therefore, the competitiveness of enterprises can also lead to competition in their partner industry.

4 Conclusion and Discussion

In the research assume that the food industry cluster is a crisscross network structure, enterprises in the cluster are homogeneous, heterogeneous or complementary, reflects the relations of competition, cooperation and symbiosis among enterprises in the cluster.

Due to the particularity requirements for food safety, its operation from environment, raw material, collaboration, inspection or quarantine institutions to any participant are extremely strict, this requires enterprises, farmers, and specialized agencies set up sound relations. Our research to regard the food industry cluster as a natural biological community, and to make every enterprise in the cluster find its own position, and form a "ecological community". The research aim is to build collaborative evolution and sustainable development model for food industry cluster, from the perspective of ecology.

Through the analysis of the above can be found, in animal husbandry food industry cluster, homogeneous enterprises located in the state of niche overlap, there will be a shift to the fierce competition in the spiral phase, also be a result of natural selection. In addition, with the development of the competition, the cluster tends to be balanced. In the process of equilibrium, the inhibition of competition between homogeneous enterprises is greater than that of heterogeneous enterprises, i.e. the general trend of "homogeneous competition and heterogeneous cooperation".

When the equilibrium state comes, the cluster is in a state of saturation. The demise of old businesses will be replaced by new ones. The ecological niche difference between enterprises is also played down. Each enterprise is the equivalent individual in the cluster. The speed and quantity of the enterprise will not change again. That's what we call equilibrium -- symbiosis.

Symbiosis is a special situation in a cooperative relationship and a closer relationship than cooperation. It can be simply understood as co-existence. That is to say, the symbiotic enterprise is an intimate long-term strategic cooperative partnership, which is dependent on each other and is interdependent, and the ecological niche overlap is low. The low overlap of enterprise niche will avoid the confrontation between enterprises in the cluster because they produce the same products and compete for the same market and source. Ecological niche resource complementary or ecological niche separation can promote the relationship between enterprises to seek their respective development resources. At the same time, the daily operation of the communist party will reduce the transaction cost of enterprises and improve the efficiency of production and operation. For a

business, it's good to have a symbiotic relationship, and it's not good. Once a party has a major problem such as financial or even bankruptcy, the other party is bound to get involved. As businesses become more dependent on each other, once the symbiotic object goes bankrupt, the business can be severely damaged or even bankrupt.

Although the competition itself has led to cooperation, it is not what we want to see whether it is excessive competition or lack of competition. What people want is a balanced development in the cluster, when the market itself does not have a role to play, with the help of government intervention. So the other main purpose of this study is to provide a manageable, maneuverable policy recommendation series to the government level. Subsequent research will be based on the theoretical framework of this paper, and the empirical research will be carried out in detail in various animal husbandry food industry clusters, such as fresh meat, frozen meat, eggs and milk.

5 Acknowledgements:

This article is just a working paper, and we only share our viewpoint with the participants of the symposium. Our viewpoint is that the ecology theory can be used in food industry ecological system. But for how to use the specific theory, such as neutral theory and niche theory need to be more study. We should show our thanks for any suggestions in the symposium, and we will revise this working paper more seriously so as to publish it in an international journal.

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Part 2 Sectoral Analysis

H A new approach for Customers of the Generations Y and Z in German Co-operative Banks (Small Banks)

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Abstract

Banks are facing major challenges in today's market. They have to cope with tough challenges on many different fronts, or they will go under. One of the biggest challenges in Europe, especially in Germany, is the low interest rate. As a result, the financial leeway is shrinking day by day. An improvement could happen in the coming months, if not years, in sight. At the same time, however, customers' behaviors and their requirements are changing quickly. In particular with the young customers of Generation Y and Generation Z, the technological requirements for banks have also changed, which is an additional task that banks have to work on. Banks should be aware of these preferences among different groups of their customers and respond them in a timely manner.

Key words:

Small Banks, Banks, Future, Generation Y, Generation Z, FinTech, Digitization

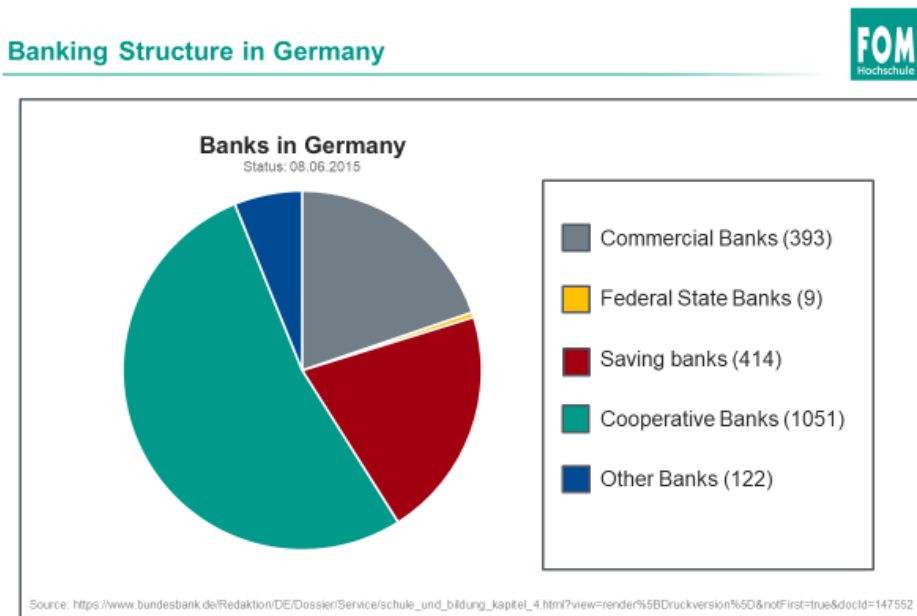
JEL-Classification:

G21

1 Introduction - The banking market in Germany

For many years till now, three bank sectors have been operating in Germany: cooperative banks, savings banks and large banks. There are, however, special financial institutions which are to be equated with banks in the narrower or broader sense. These include special banks (such as KfW) or Non- and Nearbanks (such as the Automotive banks) or Internet banks (for example, Auxmoney or Smava). These specialty banks however don't actually appear in official statistics.

Figure 1: Banking Structure in Germany



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Source: Bundesbank (2017) - The banking market in Germany 2015

It is striking that the cooperative banks represent the largest banking group in terms of numbers. A close look at some key data of this sector shows the great importance of the cooperative banks. However, current figures in 2017 showed that the number of cooperative banks is declining rapidly – from 1051 (2015) to 972 (2017). According to the data in 2017, all cooperative banks have a balanced

total to be EUR 871 billion. The banks employ a total of 151,050 employees and have 18.4 million customers in Germany.

Figure 2: Cooperative Banks in Germany

Cooperative Banks in Germany



972 banks belong to the Cooperative Bank Sector.



18.4 million Members trust the Cooperative Banks.



851 billion euros is the balance sheet total of Cooperative Banks.



151,050 employees work for the Cooperative Banks.

Source: https://www.bvr.de/Presse/Zahlen_Daten_Fakten

Source: BVR – Bundesverband der Volksbanken und Raiffeisenbanken (2017)

2 Reasons for serious changes in the banking market - especially small banks

2.1 Technical view

One of the main reasons why banks are getting worse and worse is certainly the low interest rate in the past years. For many banks, the right strategic orientation is of existential importance.

The customer structure of the cooperative banks somehow reflects the structure of German society. For the customers in the generation Y and Z, the first challenge is how to relate to them and find out what their characteristics are.

Digitization, or the handling of digitalization and social media, in my opinion, is the greatest challenge for the future of banking industry. By analyzing the data on the use of digital technology and social media around the world, we found that their distribution is very impressive (Figure 3). A glance at digital usage in Germany in comparison to that in China shows that the development is far from being completed (Figure 4).

Figure 3: Global Digital Snapshot

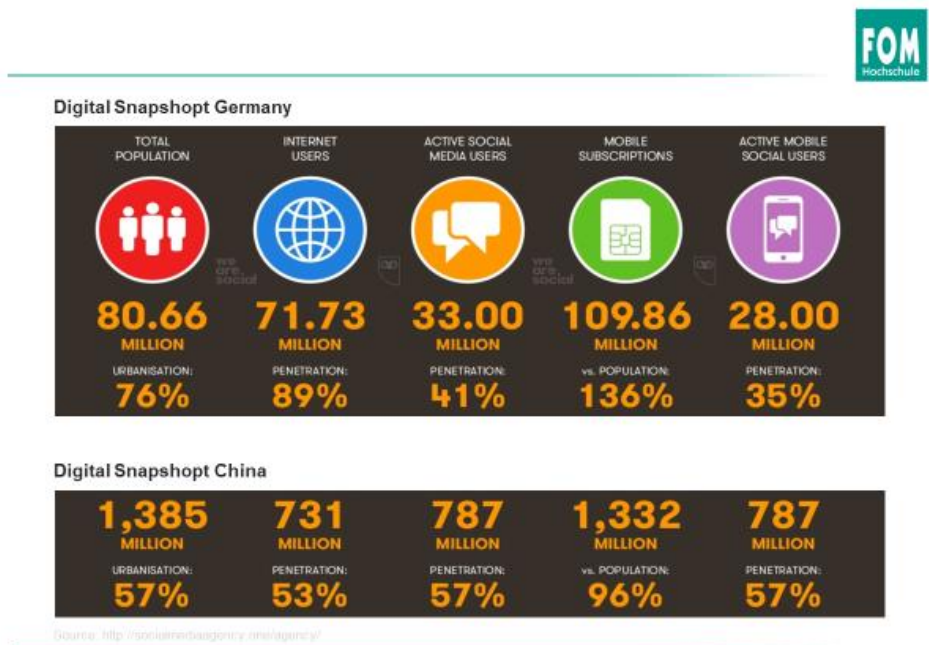


Source: Socialmediaagency (2017)

A close look at the practical behavior of customers show:

- Every second a bank customer settles the bank transactions online.
- 1/3 of the transfers are made at the counter.
- 7 out of 10 do not contact bank consultants for important matters.

Figure 4: Digital Snapshot of Germany and China



Source: Socialmediaagency (2017)

These data predict a continuous change in the habits of customers when dealing with the banks, especially in the Generation Y and Z. Importantly, the development of the digital offer in the FinTech market is already well advanced, with new FinTech companies are added every day.

Unfortunately, it gave an impression that traditional banks partly underestimated this danger of the FinTech companies and their substitution effects - how much is that underestimation is shown by the following examples:

- **Lufax**

This largest Fintech company is valued at 10 billion dollars, which topples the values of the other companies (what three companies?). Lufax has so far provided 200,000 loans with a volume of 2.5 billion dollars. With plenty of fresh capital Lufax CEO Gregory D. Gibb plans to develop Lufax to be a dominant platform in the Chinese market.

- **Lending Club**

The fierce growth of Lending Club is fueled by increasingly restrictive lending by the banks. Since its inception in 2007, the US company has already arranged loans worth more than six billion dollars. In 2014, Lending Club went public. Currently, the company is valued at 6.5 billion dollars and is thus in second place (of what category?).

- **Square**

Since 2013, Square has been offering an iPad-based checkout system with the Square Stand. Now the mobile payment provider is working on an alternative on Android basis. Twitter co-founder Jack Dorsey is the boss of Square which has a corporate value of six billion dollars, the largest Fintech company of this kind.

Figure 5: Cooperation between big players of silicon valley



Source: <https://www.cbinsights.com/research/google-fin-tech/>

Source: CB insights (2017)

Even FinTechs are underestimated banks cooperate with FinTechs. Here some examples from the cooperative banks (Payment and Banking (2017)):

- Volksbanken: Startnext, fin, lendstar, id now
- Sparda Bank: Schutzklick, lendstar, gini, web id solutions
- PSD Banken: id now, fin, dwins
- Südwestbank: Fintura
- Berliner VB: Schutzklick, Bergfürst
- GLS Bank: id now, crowddesk, better pay
- APO Bank: Fintura
- Teambank: Figo

FinTechs do work together with the big players of silicon valley. Actually, they are part of them. One good example is Kabbage (kabbage.com). This is Amazon own lending service for small businesses, which has provided \$3 billion in loans since its opening in 2017.

Figure 5 shows an overview of the network between FinTechs and some of the big players such as google and ebay.

The conclusion in the technical view is: The technical challenges are quick and big!

2.2 The Generation Y and Z

The generation Y is the first generation who grew up with computers and the internet (they were born between 1981 and 1994). They are different from the generation X. In 2015, the share of generation Y in the working population is 30%. In 2020, Generation Y will provide 50% of the world's workforce. Therefore they are also an important generation for banks. Here are some more characteristics:

- Online surfing is the No. 1 activity in the leisure.
- Many distrust companies, media and banks.
- Keep in mind the brands that are lively, modern, authentic and unique.
- Are socially engaged and connected to the environment.
- They are considered to be resourceful and rich in ideas, but also as impatient, unreliable as other generations.

When you look at the Generation Z, the technology affinity becomes even clearer. They are born in the time of fully digitization (born between 1995 and 2012). The generation Z is said to be:

- Also known as 'generation connected' or 'dot com kids'
- 1 in 2 predicted to obtain a university degree
- By 2025, they will make up 27% of the workforce
- Predicted to work 17 jobs, 5 careers and live in 15 homes in their lifetime
- 2,000,000,000 Gen Zs globally

They live in the world of digitisation. What this means are illustrated in the example of Snapchat in figure 6. This leads to the conclusion Number 2: They are different!

Figure 6: Some impressive numbers about Snapchat



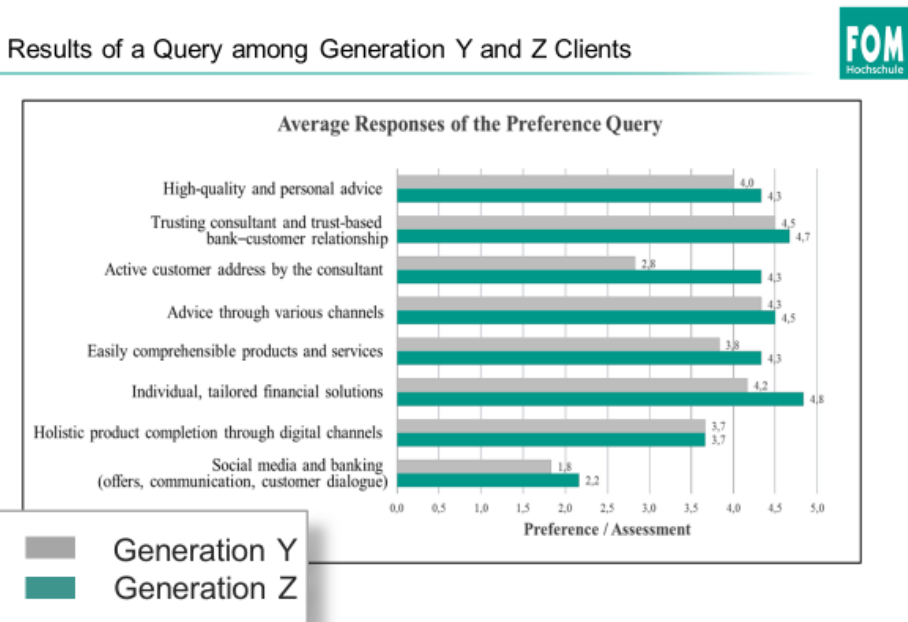
Source: Expandedramblings (2017)

3 Strategic direction Generation Y & Z

In order to satisfy the needs of genres Y and Z, new directions must be taken. The younger generations are doing more and more banking online. Bank branches of conventional characters have served their purpose.

Historically, banks with the best branch footprint have dominated their markets, gaining outsized share. However, the future banking will change. By 2020, all banks will be direct banks, and branch banking will be changing fast. Lenders will offer an anytime anywhere service, fully utilizing all banking channels in an integrated fashion. They will be re-imagining their physical footprints, introducing new branch formats, expanding physical points of presence through third-party partnerships, driving sales and cutting down the costs. As transactions and sales shift to digital channels, branches that cannot create incremental value will need to be closed, or be transformed (King, B. (2013)).

Figure 7: Results of a Query among Generation Y and Z Clients



Source: Larissa Schwab (2017)

Source: Schwab, L. (2017)

Finally, two steps are necessary:

- Service and consulting on all distribution channels at any time and everywhere, fully integrated.
- Branches in a new format, expanded in function and presentation, supported by third-party providers.

Larissa Schwab took a closer look of the behaviors of the generation Y and Z in banking. Figure 7 shows the results of a specific query among this group of clients. The following recommendations can be made based on her research results (Schwab, L. (2017)):

- **Make** omnichannel banking possible from which customers can benefit
- **Establish** downtown advisory centres on Saturdays
- **Design** modern products and new, practical customer applications
- **Digitise** processes with regard to product completion
- **Keep** data security in mind, it plays a major role
- **Create** a more pleasant atmosphere with regard to the design and appearance of branches
- **Generate** some kind of “experience banking”
- **Support** a serious, discrete, confidence-inspiring image of a bank
- **Focus** stronger to customers
- **Advertise** in social media

4 Solution

If a bank decided to follow these recommendations, it would be different to the traditional banking. The future banking shall be more open, more transparent and closer to their customers. The banks have to change to be successful. However, these changes do not come easily. One big problem is that the banks often do not recognize the need for change. Brett King knows the reason for this (King, B. (2014)): "The problem is that people who describe values such as personal interactions, availability of counseling, and psychological comfort of real spaces are part of the Baby Boomer generation or Generation X and thus describe their perception of convenience and buying behavior."

Therefore, banks need a different approach, a different view on the future influencing factors. The traditional thinking in following the steps Strategy-Structure-Culture-Technology has changed. Now the right steps are Technology-Culture-Strategy-Structure.

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Part 2 Sectoral Analysis

I The Research on National Agricultural Science and Technology Park Innovation Ability and Restricting Factors Based on AHP-TOP-SIS and Obstacle Degree Model

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Abstract

This paper put forward a innovation ability evaluation system including innovation input, innovation support, innovation output level, integration, demonstration and innovation performance, based on innovation process and Strategic position. It measured the innovation ability and level indicators of national agricultural science and technology park with AHP-TOPSIS model, according to survey data of 42 national agricultural science and technology parks in east China. On the Basis, the paper classified the 42 national agricultural science and technology parks into three groups: innovation leading park, innovation demonstration park and innovation moderation park with K-means cluster method characterized by level indicators innovation ability. In addition, the paper analyzed the key restricting factors of three groups with obstacle degree model, and gives the specific advice, so to provide the theoretic reference for national agricultural science and technology park innovation ability improvement.

Keywords

National Agricultural Science and Technology Park; Innovation Ability; Restricting Factors; AHP and TOPSIS Model; Obstacle Degree Model;

1 Introduction

In 2000, according to the deployment of the Party Central Committee and the State Council, the Ministry of Science and Technology, together with the Ministry of Agriculture, the Ministry of Water Resources, the State Forestry Administration, the Chinese Academy of Sciences, and the Agricultural Bank of China, initiated the construction of a national agricultural science and technology park. Since then, the national agricultural science and technology parks in various provinces and cities in China has been continuously established and the number of parks has increased rapidly. By the end of 2016, 246 national agricultural science and technology parks have been built in the country. The National Agricultural Science and Technology Park has developed into a frontier for the integration and transformation of China's agricultural science and technology achievements, a cradle for the cultivation of agricultural science and technology enterprises, a docking platform for the integration of secondary and tertiary industries, a cultivation base for agricultural and rural science and technology innovation and entrepreneurship, and the promotion of farmers' income and employment channels for promoting the structural reform of the agricultural supply side are the powerful engines. The construction of agricultural science and technology parks has become an important component of the country's "innovation-driven development strategy." Therefore, through the comprehensive evaluation of the innovative capacity of national agricultural science and technology parks, we can find the key constraints in its innovation and development, so that we can take targeted measures to effectively enhance the park's comprehensive innovation capabilities, and promote the transformation and upgrading of regional agriculture, with important theories and practical significance.

2 Research Progress on Innovation Capability of Agricultural Science and Technology Parks

In 1985, American scholars Rogers and Larson studied the agglomeration effect of the “Silicon Valley” in the western United States, which laid the foundation for the comprehensive evaluation of science and technology parks. Since then, Ruger and Golders have been working on the technology in the science park. In the book, the factors for the success of science and technology parks are proposed in terms of research and development bases, scientific research institutions, park environments, facilities services, and scientific leadership. The preliminary theoretical framework for the comprehensive evaluation of science and technology parks has been formed. In recent years, with the transformation and upgrading of China's traditional agriculture and the implementation of innovation-driven strategies, the research on the innovation capability of agricultural science and technology parks has gradually become a research hotspot in academia. Xu Yue first studied the development of agricultural science and technology parks from the perspective of integrated innovation theory. It analyzes the overall function and external environment of the integrated innovation platform for agricultural science and technology parks, and divides the types of integrated innovation in agricultural science and technology parks. Finally, it enhances the integrated planning and design capabilities and enhances the park's integrated innovation. The organizational capabilities and the establishment of a good internal environment and external environment for the park's integrated innovation have given suggestions for strengthening the integrated innovation capability of agricultural science and technology parks [1]. Yang Jinghua and Jiang Heping studied the agricultural chain development model of agricultural science and technology parks based on integrated innovation theory. He believed that the industrial chain of agricultural science and technology parks has a super regional nature and should rely on local resources and location conditions. Its evolution should be based on planning guidance. , Spontaneous formation is supplemented [2]. In his research on innovation capacity building of agricultural science and technology parks, Yang Jinghua proposed that the innovation content of the park includes the innovation of the main body and the object, and needs to build innovation capacity of agricultural science and technology parks in terms of innovation resource input, technology development and technology incubation, and technology innovation diffusion demonstration[3].

Zhou Lijun analyzed the sources of innovation capacity of modern agricultural science and technology parks, and believed that knowledge, learning, and social capital played a key role in the source of innovation capability in the park. Among

them, knowledge aggregation is a knowledge resource among members of modern agricultural science parks. The advantages are complementary, and the integration of knowledge enables participants to form a force for solving new problems, which in turn improves the ability to innovate; inter-organizational learning accelerates the flow and integration of knowledge in agricultural science and technology parks, the rapid diffusion of knowledge within the park and new ideas. The rapid adoption will make the cooperation within the agricultural science and technology park more compact, and it will be able to exert the technological innovation capabilities of the park, thus promoting the improvement of the level and innovation capability of modern agricultural science and technology parks. The mutual trust and reciprocity criteria of the park's social capital provide conditions for the park's cooperation and innovation, and play an important "glue" role for cooperation and innovation. It enables smooth running of the partnership and benefits all participating actors[4].

Pan Qilong and Liu Huguang built the evaluation index system of modern agricultural science and technology park competitiveness from six aspects including infrastructure construction, park size, regional advantages and market environment, industrial chain and enterprise development, scientific and technological innovation, and human capital, and determined it using analytic hierarchy process. The weight of each indicator indicates that the indicator system can be used for the identification of science and technology parks, the development and application of enterprises, and the horizontal comparison of parks [5]. Zheng Baohua, Wang Zhihua and Liu Xiaoqiu use the structural equation model to study the impact of the external environment of the agricultural science and technology park on the innovation performance of the park. The research shows that the four aspects of the innovation environment of agricultural science and technology parks are infrastructure environment, policy environment, market environment and financial environment. It can have a direct impact on the innovation performance of the park, and it can indirectly influence the innovation performance through innovation ability[6].

Liu Lihong and Li Wei formed an evaluation index system for innovation ability of agricultural science and technology parks in terms of innovation level, innovation support, and innovation performance. Expert opinion and AHP methods were used to empower various levels of indicators to form The Agriculture-Science Park Innovation Capacity Evaluation Model [7].

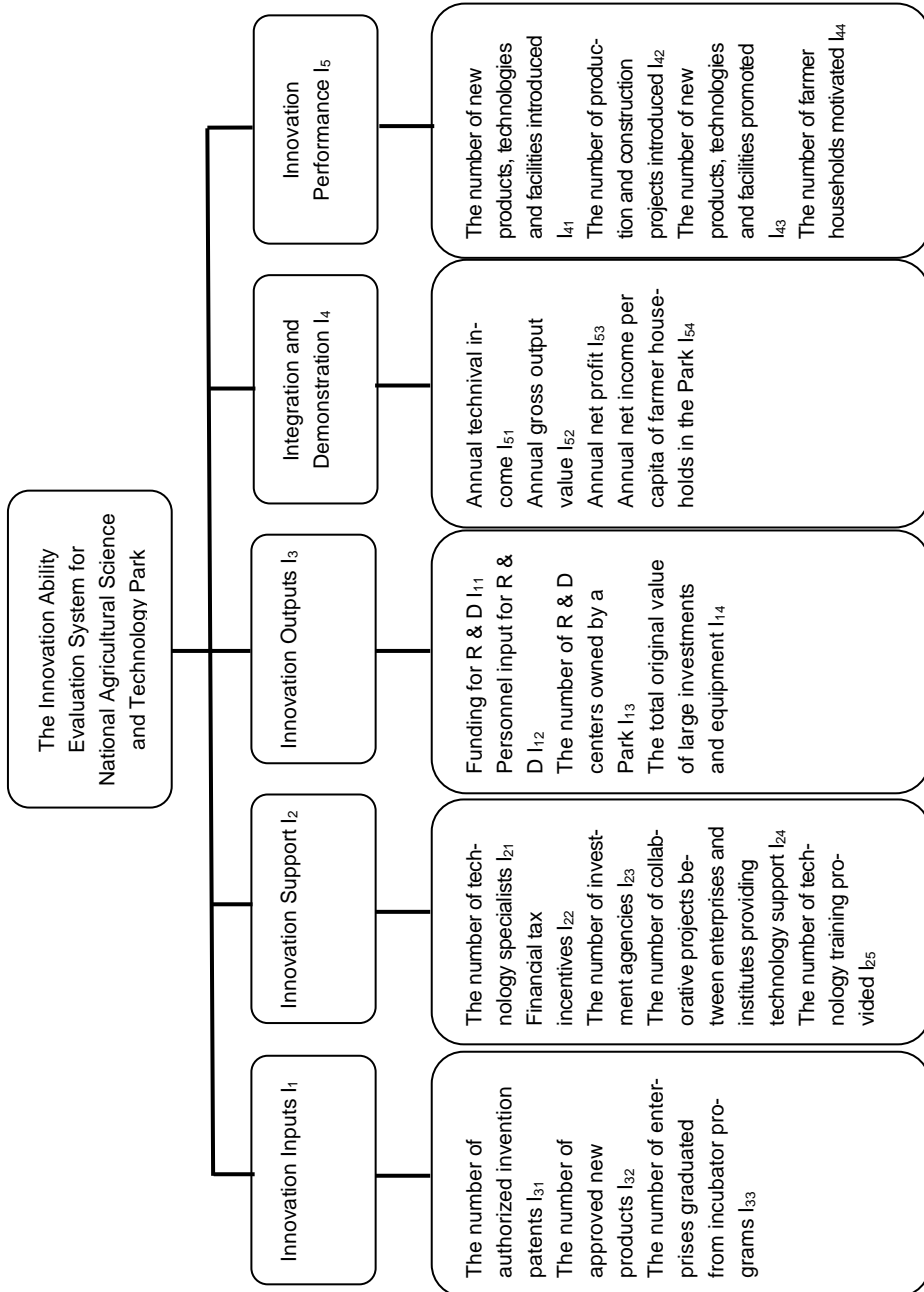
At present, the research on the innovation capacity of the national agricultural science and technology park is mainly based on theoretical exploration and case analysis of individual parks. There is no empirical analysis of the innovation ability

of large sample parks, which makes the park's own innovation capacity building status and Identifying cognition and improving the ability to innovate lack scientific basis. This paper constructs a set of scientific and comprehensive innovation capability evaluation system, uses quantitative analysis methods to accurately evaluate the innovation capability of the park, and explores key constraints to its innovation capabilities. This gives targeted advice.

3 Evaluation of Innovation Capabilities of National Agricultural Science and Technology Parks Based on AHP-TOPSIS Model

This paper is based on the perspective of the innovation process concept of the National Agricultural Science and Technology Park, that is, the process of innovation resource input → innovation outcome output → outcome market transformation, taking into account the important role of environmental factors in innovation capacity building and the “incubation of national agricultural science and technology parks”. “Strategic Positioning for Demonstration, Radiating, Driving, and Focusing” [8] proposes a national agricultural science and technology park that includes innovation input, innovation support, innovation output, integration and demonstration and innovation performance, five first-level indicators and 20 second-level indicators and innovation ability evaluation system. The investment in innovation reflects the state of innovation resources investment in the park and is the material basis for the formation of innovation capabilities. It includes the R&D expenditures of the park, R&D personnel input from the park, the number of R&D centers owned by the park, and the total original value of large-scale equipment and equipment. The innovation support reflects various environmental factors that drive and support the park’s innovation, development and innovation capabilities, including the number of science and technology commissioners, financial tax incentives, number of investment institutions, number of cooperation projects between companies and technical support units, and number of technical training courses held for five secondary indicators. The innovation output reflects the output of the park’s innovation and entrepreneurial achievements. It is a manifestation of the park’s innovation capabilities, including the number of authorized invention patents, the number of approved new breeds, and the number of incubator graduates. The integrated demonstration reflects the park’s technology introduction, demonstration and promotion, and radiation promotion capabilities, including the introduction of new products, new technologies and new facilities, the introduction of production and construction projects, the promotion of new products, new technologies and new facilities, and the promotion of local farmers level indicator. The innovation performance reflects the economic benefits formed by the transformation of the park’s innovation achievements and the social benefits that drive farmers to lift poverty and increase income, including the park’s annual technical income, annual gross output value, annual net profit, and the farmer’s annual per capita net income. The framework of the evaluation system for innovation capability of the national agricultural science and technology park is shown in Figure 1.

Figure 1: Evaluation System for Innovation Capability of National Agricultural Science and Technology Parks



Based on the evaluation system for innovation capacity of national agricultural science and technology parks, according to the "2015 National Agricultural Science and Technology Parks Innovation Capability Monitoring and Evaluation 2016" survey data from the relevant research areas in 2015, 42 national agricultural science and technology parks of six provinces and cities in East China (excluding Taiwan) were used as evaluation targets to assess the innovative capabilities of 42 national agricultural science and technology parks in East China using the AHP-TOPSIS method. The AHP Analytic Hierarchy Process (AHP) is used to determine the weight of each indicator. The expert scoring can be converted into an objective weight score by the AHP method. TOPSIS analysis method is to choose a positive ideal point and a negative ideal point. By comparing the distance between the object to be evaluated and the positive ideal point and the negative ideal point, a better object to be evaluated is selected. The method for calculating the distance generally uses the Euclidean distance method. The TOPSIS analysis method is currently widely used in evaluation studies in the field of economic management [9]-[12]. The AHP-TOPSIS method can minimize the influence of human factors, solve the problem of uncertainty in the evaluation process, and ensure the authenticity of the evaluation results. The calculation procedure for the study model is as follows:

1. Data standardization:

The dimension of the indicator data is removed by standardization of the data, including normalization in the forward and reverse directions. Equations (1) and (2) are as follows:

$$\begin{array}{l} \text{Forward} \qquad \qquad \qquad \text{standardization} \qquad \qquad \qquad : \\ x_{ij}^* = \frac{x_{ij} - m}{M_j - m_j} (i = 1, 2, \dots, n; j = 1, 2, \dots, m); \qquad (1) \end{array}$$

$$\begin{array}{l} \text{Reverse} \qquad \qquad \qquad \text{standardization} \qquad \qquad \qquad : \\ x_{ij}^* = \frac{M_j - x_{ij}}{M_j - m_j} (i = 1, 2, \dots, n; j = 1, 2, \dots, m); \qquad (2) \end{array}$$

In the above formula, x_{ij}^* is the normalized value of the indicator; x_{ij} is the original value of the indicator; M_j and m_j respectively represent the maximum value and the minimum value of the original value of the indicator in the period. After the indicators are standardized, a decision matrix B is constructed.

2. The indicator weights are determined.

In this paper, the weights of the indicators are determined by the AHP method. Based on the judgment matrix proposed by the relevant experts, Super Decision is used to find the weight values of each indicator. Specifically as shown in Table 1.

Table 1: Evaluation Indicator Weight of Industrial Park Innovation Capability

First Level Indicator Weights ^o	Second Level Indicator Weights ^o	First Level Indicator Weights ^o	Second Level Indicator Weights ^o
Innovation Inputs I ₁ ^o 0.225 ^o	Annual funding for R & D I ₁₁ ^o 0.066 ^o	Innovation Outputs I ₃ ^o 0.198 ^o	The number of authorized invention patents I ₃₁ ^o 0.082 ^o
	Annual personnel input for R & D I ₁₂ ^o 0.066 ^o		The number of approved new products in that year I ₃₂ ^o 0.065 ^o
	The number of R & D centers owned by a Park I ₁₃ ^o 0.051 ^o		Annual number of enterprises graduated from incubator programs I ₃₃ ^o 0.051 ^o
	The total original value of large instruments and equipment I ₁₄ ^o 0.042 ^o		The number of new products, technologies and facilities introduced I ₄₁ ^o 0.054 ^o
Innovation Support I ₂ ^o 0.150 ^o	The number of technology specialists I ₂₁ ^o 0.037 ^o	Integration and Demonstration I ₄ ^o 0.184 ^o	The number of production and construction projects introduced I ₄₂ ^o 0.035 ^o
	Financial tax incentives I ₂₂ ^o 0.035 ^o		The number of new products, technologies and facilities promoted I ₄₃ ^o 0.054 ^o
	The number of investment agencies I ₂₃ ^o 0.029 ^o		The number of farmer households motivated I ₄₄ ^o 0.041 ^o
	The number of collaborative projects between enterprises and institutes providing technology support I ₂₄ ^o 0.027 ^o	Innovation Performance I ₅ ^o 0.243 ^o	Annual technical income I ₅₁ ^o 0.074 ^o
	The number of technology training provided I ₂₅ ^o 0.022 ^o		Annual gross output value I ₅₂ ^o 0.055 ^o
			Annual net profit I ₅₃ ^o 0.062 ^o
			Annual net income per capita of farmer households in the Park I ₅₄ ^o 0.052 ^o

3. Build a normative weighted decision matrix.

According to the weight of each index, a normative weighted decision matrix is established, as shown in formula (3):

$$V = B \times W = \begin{bmatrix} v_{11} & v_{12} & \cdots & v_{1j} \\ v_{21} & v_{22} & \cdots & v_{2j} \\ \vdots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & \cdots & v_{ij} \end{bmatrix} \quad (3)$$

4. Determine the ideal and negative ideal points of the object being evaluated.

Let y_j^+ be the maximum value of the j th indicator value, and y_j^- be the minimum value of the j th indicator value, $j = 1, 2, \dots, m$ as shown in formulas (4) and (5):

$$y_j^+ = \max_{1 \leq i \leq n} (y_{ij}) \quad (4)$$

$$y_j^- = \min_{1 \leq i \leq n} (y_{ij}) \quad (5)$$

5. The positive ideal point $y^+ = (y_1^+, y_2^+, \dots, y_m^+)$ and negative ideal point $y^- = (y_1^-, y_2^-, \dots, y_m^-)$ of the evaluated system are obtained by formulas (4) and (5).
6. Calculate the Euclidean distance between the object being evaluated and the ideal point.

Let d_i^+ be the Euclidean distance of the i th object to be evaluated from the positive ideal point, and d_i^- be the Euclidean distance of the i th object to be evaluated from the negative ideal point, such as formula (6) and formula (7):

$$d_i^+ = \sqrt{\sum_{j=1}^m (y_j^+ - y_{ij})^2} \quad (6)$$

$$d_i^- = \sqrt{\sum_{j=1}^m (y_j^- - y_{ij})^2} \quad (7)$$

7. Calculate relative closeness and rank in order.

Let c_i be the relative closeness between the index value of the i th object being evaluated and the ideal point, as shown in formula (8).

$$c_i = \frac{d_i^-}{(d_i^- + d_i^+)}, i = 1, 2, \dots, n \quad (8)$$

The larger the value of the formula c_i is, the longer the distance between the i th object to be evaluated and the negative ideal point is, namely, the better the i th object to be evaluated is. The specific point is that the i th national agricultural science and technology park has stronger innovation ability. Based on the innovation capability evaluation index data of 42 national agricultural science and technology parks in East China in the "National Agricultural Science and Technology Park Innovation Capacity Monitoring Data 2016", the relative closeness degree obtained by using the AHP-TOPSIS model is the comprehensive score of the innovation ability of each park. And also sorted according to the size, as shown in Table 2. In addition to the comprehensive scores of innovation capabilities, this paper also uses the AHP-TOPSIS method to calculate the relative closeness of the five first-level indicators of innovation capability, as shown in Table 2.

Table 2: Score Table for Comprehensive Evaluation of Innovation Capability in the Park

Rank	Name	Innovation ability score	Innovation investment score	Innovation support score	Innovation output score	Integration and demonstration score	Innovation performance score
1	Jining Park	0.5288	0.6093	0.4017	0.4336	0.4757	0.6675
2	Huai'an Park	0.4264	0.1858	0.5017	0.5721	0.5684	0.2580
3	Xuzhou Park	0.3771	0.2777	0.3321	0.5592	0.2249	0.3963
4	Tai'an Park	0.3498	0.3175	0.1679	0.6338	0.1909	0.2333
5	Quanzhou Park	0.3476	0.2575	0.3186	0.4403	0.1858	0.4235
6	Taizhou Park	0.3342	0.2637	0.4767	0.4458	0.2369	0.1976
7	Baima Park	0.3183	0.2090	0.2861	0.5377	0.1554	0.2481
8	Fengcheng Park	0.3044	0.2388	0.1621	0.3311	0.0937	0.4430
9	Pudong Park	0.3020	0.1952	0.3518	0.3614	0.3116	0.2795
10	Nantong Park	0.3015	0.2397	0.4410	0.2683	0.3256	0.2358
11	Jimo Park	0.2972	0.2356	0.2801	0.4255	0.1826	0.2861
12	Jinggangshan Park	0.2955	0.4103	0.3052	0.2669	0.1528	0.2434
13	Dezhou Park	0.2818	0.2808	0.2285	0.3651	0.1615	0.2935
14	Changshu Park	0.2811	0.1530	0.3991	0.1032	0.3632	0.2801
15	Lianyungang Park	0.2800	0.1530	0.2458	0.2908	0.1684	0.3982
16	Nanchang Park	0.2795	0.1580	0.2488	0.3873	0.1613	0.3236
17	Binzhou Park	0.2699	0.1587	0.3025	0.2825	0.1969	0.3420
18	Shouguang Park	0.2668	0.1049	0.2377	0.2847	0.1946	0.3725
19	Huaibei Park	0.2666	0.2629	0.2152	0.2567	0.1201	0.3542
20	Zhangzhou Park	0.2546	0.1737	0.3123	0.3723	0.1302	0.1973
21	Ma'anshan Park	0.2498	0.1274	0.3028	0.2591	0.1652	0.3162
22	Xiaoshan Park	0.2406	0.1697	0.2545	0.3147	0.1783	0.2479
23	Yancheng Park	0.2133	0.1652	0.2614	0.1987	0.1678	0.2516
24	Dongying Park	0.2124	0.1687	0.1628	0.3160	0.1347	0.1999
25	Yantai Park	0.2085	0.1937	0.2130	0.2259	0.1836	0.2203
26	Suzhou Park	0.2050	0.1660	0.1587	0.2127	0.1276	0.2776

From Table 2, it can be seen that Jining Park's innovation ability score is 0.5288, ranking first, its innovation ability score is much higher than the average value of 0.2420, and the Jining Park's innovation investment and innovation performance scores are also the highest. Jining Park focuses on the investment of innovation resources. At the same time, it achieves high innovation performance through effective management and optimal allocation of innovative resources. It is a typical "high input, high output" park. In terms of innovation support, the Huai'an Park scored 0.5017, ranking first, far higher than the average of 0.1780. Innovation

support is the environment and driving factor of the park's innovation, and its high score can ensure the continuous improvement of park innovation ability. In terms of innovation output, the Tai'an Park scored 0.6338, ranking first, and the average score of 42 parks was 0.2485. The innovation output represented the formation and output status of the innovation and entrepreneurship in the park, and the higher the innovation output score. The Tai'an Park efficiently converts innovative resources into innovative products such as patents and new products, and has high resource utilization efficiency. In terms of integration and demonstration, the score of Huai'an Park is 0.5684, ranking first, and the mean value of 42 parks is 0.1802. The integration demonstration reflects the promotion of new products and technologies introduced and created by the park, and high integration demonstration scores. Huai'an Park has played a good role in radiating and promoting the adoption of new technologies and new products, and its innovative social benefits have been remarkable. In terms of innovation capacity and the differences in the first-level indicators of parks, the use of coefficient of variation estimates shows that the coefficient of variation for innovation input scores is the largest, at 59.3397. This shows that the gap between the 42 parks in innovation input is very significant and there are obvious signs of insufficient investment in innovation in the parks that fall behind. The coefficient of variation of the composite score of innovation ability is relatively small compared to the first-level indicators, indicating that the park's innovation capability is relatively small, and it also indicates that the park's innovation capability has obvious structural differences.

4 Cluster Analysis and Restricting Factors of Innovation Ability in National Agricultural Science and Technology Parks

Based on the evaluation of the national agricultural science and technology park's innovation capability, this paper uses the five first-level indicators of innovation ability and uses K-means clustering to divide the 42 parks in the six provinces in East China into three categories, namely the Innovation Leading Area, Innovative Demonstration Areas and Innovative Moderation Area. The Innovative Leading Area has only one park in Jining, which indicates that the innovation capability of Jining Park has obvious leading advantages in East China. Innovative Demonstration Area includes 21 parks in Huai'an and Xuzhou, and the innovation capability of the Innovative Demonstration Area is at the second level. The Innovative Moderation Area includes 20 industrial parks such as Yancheng and Dongying. The comprehensive innovation capability of the Innovative Moderation Area is at the third level, as shown in Table 3.

Table 3: Classification of Parks Based on Clustering Analysis of Innovation Capabilities

Innovation Leading Park ^o	Innovation Demonstration Park ^o	Innovation Moderation Park ^o
Ji'ning ^o	Huai'an, Xuzhou, Tai'an, Quanzhou, Taizhou, Baima, Fengcheng, Pudong, Nantong, Jimo, Jin'gangshang, Dezhou, Changshu, Lianyungang, Nanchang, Binzhou, Shouguang, Huaibei, Zhangzhou, Ma'anshan, Xiaoshan ^o	Yancheng, Dongying, Yantai, Suzhou, Chongming, Jinhua, Huzhou, Bengbu, Linyi, Shangrao, Ningde, Jiaxing, Pingxiang, Anqing, Wuhu, Fuyang, Hefei, Ganzhou, Xinyu, Tongling ^o

Based on the clustering of the park's innovation capabilities, this paper uses profitability models to explore key constraints in the building of innovation capabilities in different types of parks [13], so that the control and improvement of key factors can effectively and quickly improve the park's innovative capabilities and the formation of targeted recommendations. The research model is shown in equations (9), (10) and (11):

$$F_i = R_i \times W_i \quad (9)$$

$$I_i = 1 - X_i \quad (10)$$

$$Y_i = \frac{F_i \times I_i}{\sum_{i=1}^{20} (F_i \times I_i)} \times 100\% \quad (11)$$

In the above formula, F_i is the factor contribution degree, that is, the impact of a single indicator on the total target, I_i is the indicator deviation, which is the difference between the evaluation value of a single indicator and 100%, and Y_i is the degree of obstacle, that is, the effect of a single indicator on the ability to innovate. degree. W_i is the weight of the i th index, R_i is the weight of the index of the index to which the i th index belongs, and X_i is the normalized value of the individual index. Based on the relevant data of 42 parks in the East China region of the "National Agricultural Science and Technology Parks Innovation Capability Monitoring Data 2016", it is possible to calculate the barrier scores of the three types of parks: Innovation Leading, Innovation Demonstration and Innovation Moderation, and use indicators as a key constraint to the improvement of park innovation capabilities that rank the top five in scores. Specifically, as shown in Table 4.

Table 4: Analysis of Key Constraints to Innovation Capability in Different Types of Industrial Parks

Park Type	Key Factors (%)				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Innovation Leading Area	R&D Staff input I_{12} 6.585	Number of approved new breeds I_{32} 4.931	Annual per capita net income of farmers in the park I_{54} 4.616	Number of new products, new technologies and facilities promoted I_{43} 4.572	Number of approved new breeds I_{31} 4.057
Innovation Demonstration Area	R&D Staff input I_{12} 6.280	R&D fund input I_{11} 6.143	Park's annual technical income I_{51} 5.895	Number of authorized invention patents I_{31} 5.430	Park's annual net profit I_{53} 5.297
Innovation Moderation Area	Number of authorized invention patents I_{31} 7.699	Park's annual technical income I_{51} 7.261	R&D staff input I_{12} 6.599	R&D fund input I_{11} 6.490	Number of approved new breeds I_{32} 6.332

From Table 4, it can be seen that the different types of parks are the most important constraints in the construction of innovation capabilities, and they provide specific suggestions for countermeasures:

- (1) In terms of Innovation Leading Area, also refers to as Jining Industrial Park, the biggest constraint to the innovation capability construction is insufficient input from R&D staff, followed by the number of approved new breeds, per capita income of farmers in the park, promotion of new products, new technologies and facilities, and authorized number of invention patents. Therefore, the innovation leading area should increase the introduction and input of innovative talents. Since the national agricultural science and technology parks are generally built in the outskirts of counties and cities, they lack the geographical advantage of the introduction of talents. Therefore, the park is required to establish a new system of hiring talents for science and technology, and to attract agricultural research and teaching through preferential policies for talents and flexible employment systems. And promote the technical talents to invest in innovation in the park. At the same time, establish and improve the park's professional management organizations, professional management organizations through the organization of training and exchanges to cultivate the middle ground of technology and innovative talents. In addition, the park should focus on cross-regional cooperation between industry, universities and research institutes. The local Jining district lacks high-level universities and scientific research institutions, especially agricultural colleges and universities. The park must strengthen cross-regional cooperation with the agricultural universities and research institutes in order to use scientific research. The cooperation model of industry, universities, and research institutes enhances the technical support of the cooperation unit for independent innovation in the park, thereby generating more new products and patents for inventions. The cooperation methods between Yangling agricultural highland, Northwest Agriculture and Forestry University and "Yellow Triangle" agricultural high area and Shandong Agricultural University are worth learning from, through the introduction of research bases in agricultural universities, to solve the problem of innovative technical support and intellectual capital focus. Finally, the use of radiation in the Jining Industrial Park is insufficient, which requires the park to explore and adopt new technology promotion models. At present, the agricultural science and technology expert compound has proved to be a feasible and actionable new way of promotion, and the "professional + enterprise + base + farmer" achievement transformation and technical service model has produced good results in Tianjin and other parks [16]. The model of experts + leading enterprises + farmer households used more

in the agricultural science and technology parks in Sichuan, and the effectiveness of promotion was also obvious.

- (2) For 21 parks such as Huai'an in the Innovation Demonstration Area, the most important constraint factor in the building of innovation capacity is insufficient input from R&D personnel. In addition, the park also invests in R&D funding, annual technical revenue, invention patent authorization, and annual net profit is also relatively inadequate. These are the key constraints to the park's comprehensive innovation capabilities. Therefore, Huai'an and other parks that are in the innovation demonstration area must also first achieve the focus of innovative human capital through talent acquisition, flexible employment, and independent training. Secondly, R&D expenditure is an important factor affecting the innovation demonstration area. In this regard, the investment and financing channels of the park should be enriched. At present, the operating models of the park are mainly government-led, enterprise-led, and scientific research institutions. The government-dominated parks occupy the majority, and most of the parks still rely mainly on government investment and have a single financing channel, which is reflected in the fact that there are few investment institutions and low social financing ratios in the park. The experience of the development of high-tech industrial clusters represented by Silicon Valley proves that the development of the science and technology industry is inseparable from a large amount of social investment. The venture capital institutions represented by Sequoia Capital and KPCB are strongly promoting Silicon Valley's High-tech industry development. Similarly, Israel has become a high-tech industrial powerhouse from a traditional agricultural economic country and is closely related to the launch of a venture capital plan represented by YOZMA. Therefore, the government should encourage the development of risk investment institutions in the park, promote the combination of innovation and development in the park with venture capital, and establish risk investment guarantee companies for agricultural science and technology. In addition, there is a problem of lack of innovation and transformation in the innovation demonstration area. This requires that the park must transform its innovation orientation and build a market-oriented innovation mechanism. At the same time, it must vigorously develop intermediary agencies engaged in the transformation of innovative markets and actively promote agricultural science and technology entrepreneurial activities. Finally, the low net profit is mainly due to the repetitive setting of the park's leading industries and some of the parks still rely on the development of traditional industries. This requires that the government must coordinate the industrial settings of the park, highlight the dominant characteristics and advantages,

and realize the complementarity of industries between the parks or the upstream and downstream industries. At the same time, we must pay attention to the assessment and monitoring of the park's innovation capabilities, and timely launch the exit mechanism (delisting and reduce support), and forced the park to transition from "relying on traditional industries" to "innovative development" mode.

- (3) For the 20 parks like Yancheng, which are in innovation moderation area, the most important constraint in their innovation capacity building is the limited number of authorized invention patents. In addition, the park's annual technical revenue, R&D staff input, R&D funding, and approved number of new product is also an important constraint to innovation capacity building. This shows that there are obvious problems in the park's capacity for independent innovation in the park with innovation moderation areas, which is reflected in the number of patents and new products. This requires the strengthening of cooperation between production, education and research, and the accumulation of innovative talents, and the increase in the number of innovations. Secondly, the park's technological transformation capability is not high. This requires a clear and innovative market orientation and actively promotes intermediary services for innovation and transformation. Furthermore, investment in R&D funds is also a constraint to the improvement of innovation capacity in parks with innovative and moderation zones. Therefore, the park needs to increase the input intensity of R&D. Through the introduction of social capital and venture capital, the diversification of scientific research funding channels in the park can be achieved, and the financial support for development is provided.

5 Conclusions and Suggestions

Based on existing research, this paper has established a national agricultural science and technology park innovation capability evaluation system that includes innovation input, innovation support, innovation output, integration demonstration and innovation performance, five first-level indicators and 20 second-level indicators. The survey data of 42 national agricultural science and technology parks in six provinces and municipalities in China have used the AHP-TOPSIS method to evaluate their comprehensive innovation capabilities and obtained the following conclusions:

(1) The comprehensive ability score of Jining Park's innovation ability is 0.5288, ranking first, and its innovation ability score is much higher than the average value of 0.2420. In terms of sub-indicators, Jining Park also scored a leading position in innovation input and innovation performance. Huaian Park ranked first in innovation support and integration demonstration, and Taian Park scored the highest in innovation output. In terms of innovation capacity and the differences in the first-level indicators of parks, the use of coefficient of variation estimates shows that the coefficient of variation for innovation input scores is the largest, at 59.3397. This shows that the gap between the 42 parks in innovation input is very significant and there are obvious signs of backwardness in the park. Insufficient investment in innovation. The coefficient of variation of the composite score of innovation ability is relatively small compared to the first-level indicators, indicating that the park's innovation capability is relatively small, and it also indicates that the park's innovation capability has obvious structural differences.

(2) Using the five primary sub-indicators of the park's innovation capacity as the characteristic variables, the parks are divided into three categories using the method of K-means clustering. The parks with the first level of innovation ability is the innovation leading area, only including Jining. The parks with innovation capacity at the second level is the innovation demonstration area, including 21 parks such as Huai'an; and the park with innovation capacity at the third level is the innovation moderation area, including 20 parks such as Yancheng.

(3) The analysis of the restrictive factors of the innovation ability of the three types of parks shows that the biggest constraint factor of the innovative ability of the Jining Park is the insufficient input of R&D personnel. In addition, it also includes the creation of new varieties, boosting the income of farmers in the park, and promotion of new technologies. There is also a relative shortage of invention patents. The biggest constraint of the innovation demonstration zone is also insufficient input from R&D personnel. In addition, it also includes four important constraints of R&D funding, annual technical revenue of the park, invention patent

authorization and annual net profit. The biggest constraint of the innovation demonstration area is the limited number of invention patents. In addition, the park's annual technical revenue, R&D staff input, R&D funding, and adoption of new in-depth products are also important constraints in innovation capacity building.

(4) For innovation leading areas, to attract talents engaged in agricultural scientific research, teaching, and promotion into the park through innovative talent policies and flexible employment systems, cross-regional cooperation with the agricultural universities and research institutes must be strengthened. There is a need to explore and adopt new technology promotion models including agricultural science and technology experts. For 21 parks such as Huai'an in the innovation demonstration area, while strengthening the focus of innovative talents, the park will promote innovation and development of the park and combine venture capital, establish a risk investment 0 guarantee company for agricultural science and technology, and enrich funding channels for R&D funding. In addition, a market-oriented innovation mechanism will be established to encourage the development of intermediary institutions in the technology market. For 20 parks, such as Yancheng, which are in the innovation moderation area, it is necessary to strengthen the cooperation between production, education and research, and to achieve the accumulation of innovative talents and increase the number of innovations. It also clarifies the innovative market orientation and actively promotes intermediary services for innovation and transformation. Finally, through the introduction of social capital and venture capital, the diversification of scientific research fund-raising channels in the park will be realized, and financial support will be provided for its innovation and development.

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Part 2 Sectoral Analysis

J Tourism in China and Germany - A micro perspective analysis to outline primarily implications for the tourism industry

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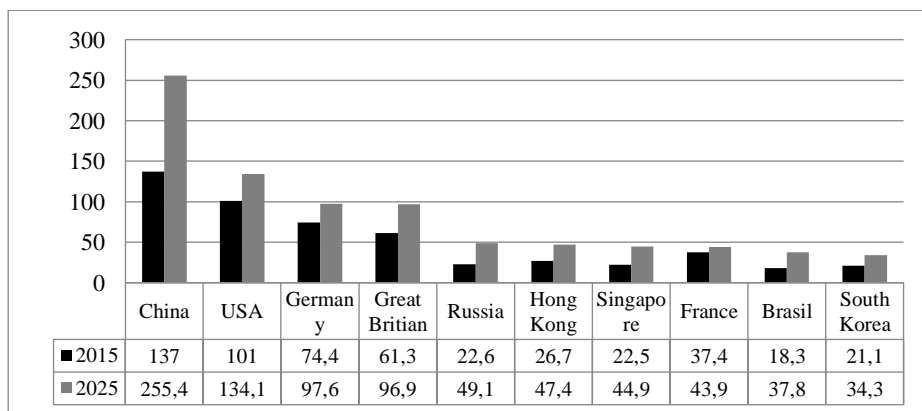
Abstract

The paper analyses the circumstances of tourism in China and Germany. It reviews the background to understand tourism developments. By employing a micro perspective of tourism, it becomes possible to understand the behaviour of an individual tourist in order to outline future market chances as well as the implications for the tourism industry.

1 Introduction

In Germany and China, the tourism industry increasingly contributes to the national GDP as well as becomes a major employer the economy. From 1995 up to 2016 in Germany the turnover of inbound tourism raised from 13,8 up to 33,8 billion euros whereas the total turnover for outbound tourism raised from 46,0 billion euros up to 72,1 Billion Euros. Today the tourism sector has a share of 10,8% to the German GDP (UNWTO Short Termin Tourism Trends 2017). In China, the tourism sectors count for 2,8% of the national GDP and recognized annual growth rates by more than 10,5% since 2014. The tourism industry raised in the similar time period from 1995 to 2016 from 10,5 billion dollar up to 46,3 billion dollar for the inbound tourism and from 8 Billion Dollar up to 57,3 billion dollar for the outbound tourism (UNWTO World Tourism Barometer 2017). Currently, China takes with 21,8% of the worldwide tourism spending the highest share (UNWTO 2017). For Chinese tourist is Europe with 50% of the outbound tourism of the target destinations. Germany follows currently after France and Austria. For the future, the estimated world wide tourism expenditures by the UN World Tourism Organisation (UNWTO) is suggesting that this development continues as outlined in the following figure:

Figure 1: Estimated World Wide Travel Expenses by Country in Billion \$



Source: UNWTO 2017

Due to the forecasted positive developments, the tourism industry received in the literature and policy makers a considerable attention (Ayeh/Shanshan 2011, Breda 2008, Wang 2017, Hollinshead 2012, Andreu/Quer 2010, Jianhong 2009). As the German tourist market is known as a mature market, sources for future

growth can only be expected through international tourism and the Chinese outbound tourism is therefore an interesting source. Nevertheless, most of the publications analyse these developments from a macroeconomic perspective and leaving out managerial implications for a sustainable tourism development. Only recently first publications have been suggesting first challenges for both countries in order to manage future growth and indicating a number of problems (hotels.com 2017, AHK 2012, BMWI 2017a). In particular, if one analyses the ratio of inbound and outbound tourism between the China and Germany, one finds that these developments do not go along with each other. In the past years, the number of German tourists stayed stable with 650 thousand tourists a year, whereas the outbound tourism to Germany increased (UNWTO 2017).

It appears that Chinese tourism products appear to have lost further attraction for German tourist. On the other hand also the Chinese tourist is challenging the German tourism industry due to a different tourism behaviour (hotels.com 2017). The objective of this paper is to bring more light into these observed developments by taking a deeper look at the tourism market by a micro perspective. The contribution to the knowledge is of elaborate nature and to determine the differences between the German and Chinese tourism industry. This approach should give a different perspective approach to research as well as to give some recommendations to the tourism industry.

2 Review of the background to understand tourism developments

The theoretical background of studies in tourism has to be found in a multidisciplinary approach and are guided by regional development, behavioural and psychological theories to research travel behaviour. Thereby tourism is understood as an event where people leave their home destination for various reasons, and return after a particular time period. In order to research, tourism, the relationship between mobility, leisure behaviour and have been modelled by various scholars. The model of Kasper (1993) is concentrating more on the relationship between the various tourist organisations and the person as a tourist. In order to promote tourism the various tourist institutions need to interact in order to form a holistic approach to form an offer which will in the end determine the demand. As this model finds its particular entity in tourism marketing it is suggested that the tourism organisation can on the one hand influence tourism behaviour, but on the other hand they need to reflect the individual expectations of a prospective tourist. This means in particular that a destination has to market itself to the needs of the prospective tourist. Krippendorf (1996) on the other hand is more concentrating on the behavioural side of tourism. Krippendorf differentiated between the daily working life or everyday life and leisure or holiday life or versus-everyday life. One of the prime travel motives is that a tourist likes to gain new experience during his vacations and like to return to his daily life with new impressions. The model of Feyer (2015) is analysing more relationships within the tourism economy as well as their determinants. Thereby he divided the various determinants into inner and wider elements which determine the tourism as a system. In particular in his model the various political, social and environmental entities are reflected which as a whole determines the success in tourism. As a result, the promotion of tourism request a holistic approach and cannot be influenced by public policies alone.

The knowledge of the tourism behaviour of Chinese and German tourist is rather descriptive explaining more the macro economic and social reasons for the development rather than giving some information about the differences for managerial puposes. The prime reason for the fast development of the tourism market in China is explained by an increasing number of paid leisure time in China (Breda 2008). Since this time is still restricted Chinese like to combine public holidays with their annual leave in order to explore their own country and visits of relatives. This huge internal tourism intensity explains why the Chinese have a leading position in tourism (Xi 2009) , but provides also the reasons for a very low daily spending rate of each individual tourist (UNWTO 2017). With respect to the inbound tourism, the growth rates are explained by an easier access to the Chinese

tourism market due to new ADS (Approved Destination Status regulations) standards for tourists. These standards allowed further for tour operators to develop own packed tours. (Artl/Freyer 2008). Nevertheless, so far there are only little insights how this uprising growth can be promoted or why in particular the inbound tourism from Germany is stagnating. The Chinese literature on the other hand, concentrates currently more on community development in order to build up the infrastructure for tourism as well as to open up the society for tourism (Xu/Lew/Zhang 2014, Xi/Wang 2015).

3 Methodology

The objective of this paper is to derive an understanding of the tourism developments in China and Germany. By employing a micro perspective of tourism, it should become possible to understand the behaviour of an individual tourist in order to outline future market chances as well as the implication to the tourism industry. The research methodology is at this stage of a descriptive and inductive nature. The analysis is based on a review of existing statistics and reports in order to determine areas of differences and their implications for the management of the tourism organisation like tour operator and hotels.

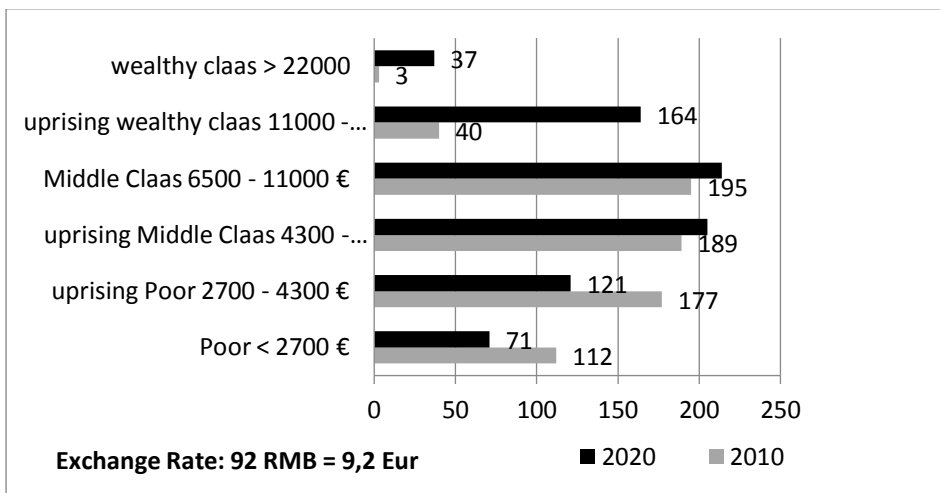
The underlying research model is therefore straightforward to analyse the current market developments and the individual market behaviour. This first attempt of the analysis should provide some insights of implications of German and Chinese tourism to the various organisations in the tourism industry (hotel, tour operators as well as tourism organisation and tourism policy as output factors). Thereby the focus of this research is to define more the factors in order to explain the noted differences in the market developments. The data have been drawn from statistics of the UNWTO (United Nations World Tourism Organisation), OECD (Organisation for Economic Co-Operation and Development), national statistics in China and Germany as well as a content revision of various articles and web-sites determining the character and motivations of tourist.

4 Tourism in China and Germany

4.1 Macro- and micro-economic determinants as input factors

The travel market in Europe is highly diversified and covers a whole range of cultural and leisure based tourism products. The German tourist himself is regarded as a high experience tourist whereas in China tourism as such is a relatively new phenomena. In Germany the market is known as highly intense and competitive. The consumer behaviour in tourism is based on prices and event orientation (BMW 2017 a, BMW 2017b). In China, the rapid growth in the tourism market can be explained apart from the increasing leisure time by an improved income situation of Chinese as the following figure outlines. In particular, one finds that the middle income class in China is growing rapidly (UNWTO 2017). This group is known as highly consumption orientated and has to be regarded as the source for the current developments.

Figure 2: Income Distribution in China in 2010 and 2020.

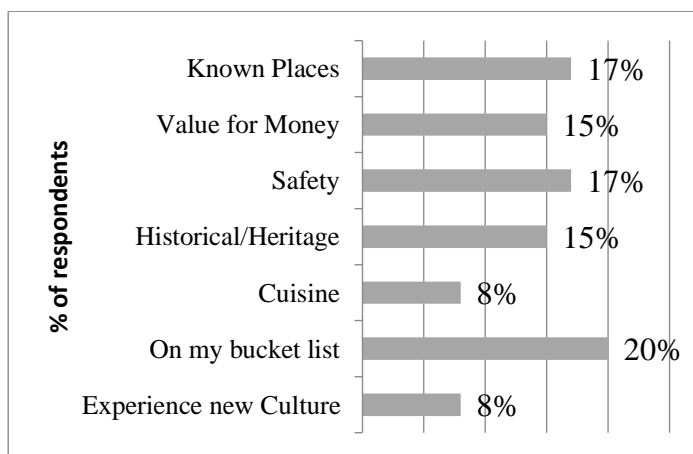


Source: UNWTO 2017

The growth itself is enhanced by the further accelerator as to obtain easier the permission to stay abroad as well as lower transportation costs. On the other hand, if one starts to apply a worldwide survey on the factors how tourist determine their next holiday destination, one mind find fundamental differences of tourism behaviour between the two countries (hotels.com 2017). In the past, China has been for the majority of Germans on the shopping list, whereas this attitude

changed and for Chinese Germany found a place on their shopping list. This behaviour refers to some extent back to a correlation between business and tourism behaviour. Due to the opening of the Chinese market and an increasing business activities also the private tourism is affected (Li/Soyez 2016, Wen/Tisdell 2001). However, if one considers in China the revenue of the inbound tourism dropped from 55,6 billion euros in 2013 to 44,4 billion euros in 2016, the period to explore China as a tourist appears to be over (UNWTO 2017). Shopping list tourism or pure heritage and cultural tourism seems to face a stronger competition. Hence, currently China seems only to react to this development by dropping the price in order to gain new tourist groups (Ayeh(Shanshan 2011).

Figure 3: Criteria when choosing the next destination



Source: Hotel.com 2017

Whereas in Germany the tourist today select from a wide range of tourism products containing aspects of the event, health, recreation or culture and heritage holidays, in China the product of cultural and heritage tourism dominates (Balmer/Chen 2016). In particular, there exist a difference how recreation is interpreted. Although health and wellness as such have a long tradition in China, it appears not to be converted into tourism products. So far wellness are interpreted by Chinese by its nature, however, it has not been made accessible for inbound tourist (Chen 2012, Li 2004, Huang, Honggang 2014).

Within the destination management, the analysis of the study by (AHA 2012) suggest that both countries need to pay more attention to destination management. Social media has a major impact to tourism behaviour and destination need to

communicate with potential tourist by this media as well to provide online-booking possibilities. A tourism product which does not exist in the world wide web will be not known by a potential tourist. Both countries also need to adjust better to the consequences of the demographic change in the population. In both countries the average age of the tourist is growing, whereas destinations adopt only slowly to the needs of mature tourist. Moreover, environmental issues start to determine more strongly future tourism behaviour. In particular air pollution and smog does have a negative impact towards tourism behaviour. Finally, the effects of terrorism is determines increasing tourism behaviour. Although both countries are regarded as safe, uncertaining and an unclear communication determines the decision for long distance travelling too.

4.2 The German tourist in China and the Chinese Tourist in Germany

The analysis of the behaviour and expectations of the individual tourist gives a number of suggestions for the future understanding and management of tourism. German tourist appear to transfer their international experiences to China and have a higher interest to integrate themselves to China, whereas Chinese tourist in Germany appear more to stay more on their own. The following table should summarize the observations of various reports and outline the major differences in tourism behaviour:

Table 1: Differences in the tourism behaviour of Chinese and Germans

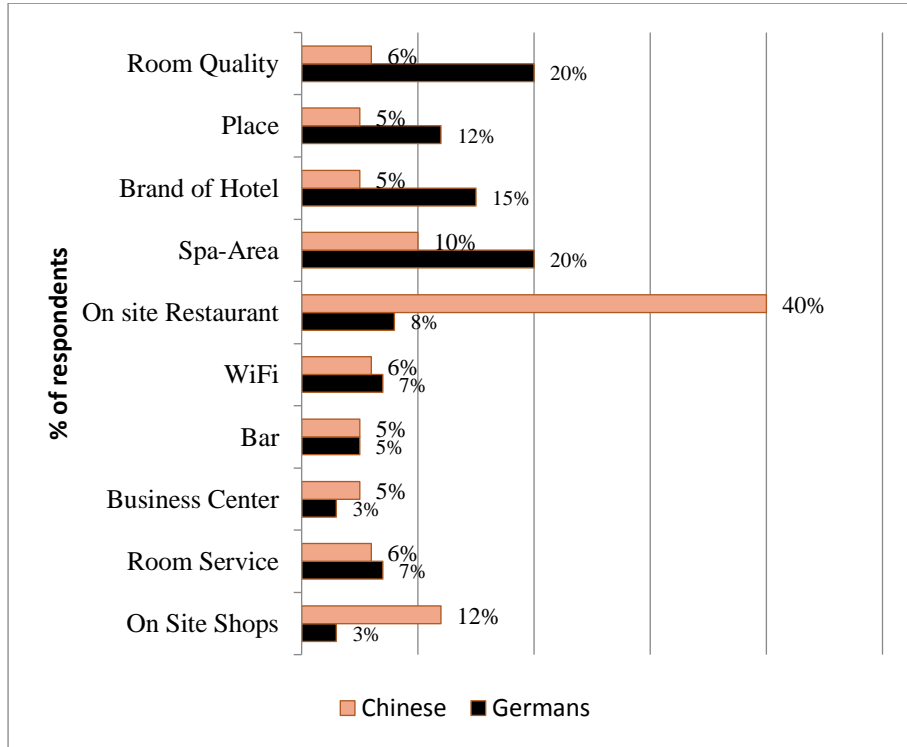
Criteria	Germans in China	Chinese in Germany
Restaurant	Seeking local cuisine or in hotels a mixture between Chinese and European Food. The experience of food is a travel motivation.	Expecting Asian and Chinese food, including Chinese food services.
Important selection criteria when choosing a hotel	Brand of Hotel, Place, Room Quality and Spa facilities	Mainly the availability of a restaurant as well as shops on site.
Hotel rooms	High quality rooms	Equal rooms, quality of a room
Staff	Expecting the English language. The social intercourse is based on a little power distance and small	Expecting English and Mandarin Language. The social intercourse is based on a high power distance

	hierarchy. Service staff is regarded as peers in order to allow a comfortable stay.	and hierarchy. Service staff is regarded with lower status.
Service of the hotel	Expect local guidance	No hotel guidance due to the own tour operator
Payment	International Credit cards	Credit cards including. Chinese mobile payments (Alipay and WeChat)

Source: AHK 2012. DIHK 2014, TUI AG 2012, Hotels.com 2017 and own observations

These differences find an impact, for example, how Germans and Chinese tourist select a hotel. Whereas for Chinese tourist a hotel is regarded mainly as a place of accomodation, for German tourist a hotel is an important part of the travel arrangement (see the following figure). Accordingly, German tourist is willing to allocate a higher budget for a hotel than a Chinese tourist is prepared to do.

Formel 1: Criteria when choosing a hotel



Source: Hotels.com 2017

On the other hand, for Chinese tourist is consumption of western products a prime motivation of travelling as the following figure shows. Hence travel experiences and souvenirs are evaluated differently. Following Krippendorf (1992) they are interpreted more by local experiences, whereas for Chinese they are more evaluated to by obtaining international products.

Figure 4: Popular products of Chinese tourist during their stay in 2013



Source: Hotels.com 2017.

5 Implications to Tourism-Management and Research

In reflection of the first analysis, the following first implications can be determined for the tourism industry in order to adjust better to the needs of the incoming tourism for a sustainable development:

- 1 Hotel Management: In China and Germany there exists a clear demand for the staff to improve language skills and to define a client-guest relationship which appears to be contradictory to the own home country. Whereas German tourist seeks more local assistance by the hotel, Chinese tourist do less demand such a service due to an own travel guide. Chinese tourist expect more an all inclusive treatment considering on the basis of Asian hospitality as well as considering a low budget for accomodation.
- 2 Hotels in China should look more for hotel brands as this is regarded in Germany as a sign for quality. This applies particularly to the quality of the rooms and possible wellness possibilities. In contrast to Chinese tourist, the German tourist is willing to pay for these services.
- 3 Both countries need to concentrate more on social media and booking engines. This applies particularly for the Chinese market as the Germans like to use a single packaging and to select between options while designing their tour.
- 4 The destination management in both countries needs to consider more the needs of an increasing elderly tourism society. This means not to cater for physical handicaps only but also to design new products in order to consider the interest of this important tourism market group. Therefore, tours should be developed on different concepts and possibilities in order to be attractive.
- 5 In China, rural tourism can be an attractive tourism product and needs to better accessible. Nevertheless, this requires also a clear quality strategy.
- 6 Tour operators developing package tours in China need to develop joint products as to combine various events with heritage products. In particular for German tourist there must be more flexibility in the programmes whereas Chinese need more guided tours. Also tour operators should incorporate in their arrangement the high interest for typical retail products and may seek here new cooperations.
- 7 Tour operators developing package tours in Germany should develop joint products between heritage products and shopping tourism. Thereby should also be performed a revenue transfer from the retail industry to

the hotel industry in order to reflect the structure of Chinese tourism spending.

- 8 This paper could only indicate differences in the existing data. Nevertheless, future research to analyse the differences of tourism between the two countries for the benefit to support a sustainable development in both countries should more the life-cycle of heritage and culture tourism and this product needs to be managed with the needs of future tourism generations. As in both countries the recreation and event orientation is increasing as well as factors of a sustainable tourism are of importance, the mutual interpretations of these factors need to be incorporated in the design of tourism products. This current observations show that the meaning and interpretations differ considerable which determines and explains the tourism behaviour.

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Part 2 Sectoral Analysis

K Study on the Development Trend and Innovation Capability of Shandong National Agricultural Science and Technology Park

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Abstract

By comparing the data of 9 national agricultural science and technology parks in Shandong Province on the operational framework, innovation support, innovation level, innovation support and innovation performance, the paper analyzes the operation models and innovation capacity building and development of each park in Shandong Province, and pointed out that there are problems in the development of the park's innovation capabilities, and put forward targeted recommendations.

Keywords: Shandong; National Agricultural Science and Technology Park; Innovation ability; Investigation and research;

1 Introduction

The construction of a national agricultural science and technology park is an important task put forward by the Party Central Committee and the State Council. Its evaluation of innovation capability is not only an important part of the national innovation survey system, but also an important means to promote the healthy and sustainable development of the national agricultural science and technology park innovation activities. The Agricultural Science and Technology Park has demonstrated a new model of economic development in the age of science and technology, creating a new economic form of the science, technology and agricultural industry, which will become the main form of agricultural development in the 21st century. National agricultural science and technology parks generally refer to a certain area in the outskirts and rural areas where there is an intensive agricultural intelligence resource, a certain industrial advantage and locational advantage, and relatively economic development. The government, collective economic organizations, private enterprises, foreign-funded enterprises, and rural households Investment and construction, with scientific research, teaching and technology promotion units as the technical support, develop and introduce high-tech agricultural technologies, new varieties and new facilities, form a regional agricultural science and technology innovation base, demonstration base and production base, and promote the development of regional agricultural economy.

The construction of the national agricultural science and technology parks jointly promoted by the six ministries and commissions including the Ministry of Science and Technology and the Ministry of Agriculture has been under way for more than ten years. Shandong Province, as a major agricultural province, has actively implemented the construction of agricultural science and technology parks, and solved industrial problems with industrial development. Science and technology will play a supporting role in deepening the structural reform of the agricultural supply side, and building and perfecting the four-level agricultural science and technology park system at provincial agricultural science and technology parks, provincial agricultural high areas, national agricultural science and technology parks, and national agricultural high areas. At present, there are 19 national agricultural science and technology parks in Shandong Province. The provincial government has approved the construction of 14 provincial agricultural high-tech industrial development zones. The Provincial Science and Technology Department and the Finance Department jointly approve the construction according to the idea of "one county, one park and one characteristic". 111 provincial agricultural science and technology parks have achieved full coverage of agricultural

counties (cities, districts) throughout the province. The development of agricultural science and technology parks in Shandong Province has provided tremendous support for the construction of the agricultural industry and strategic industrial bases, and has gradually become an important carrier for poverty alleviation in Shandong Province and the advantages of agricultural provinces.

2 Analysis of Operational Structure of 9 National Agricultural Science and Technology Parks in Shandong Province.

The basic conditions and management models for the construction of 9 national agricultural science and technology parks in Shandong Province are shown in Table 1.

Table 1: Basic Situation of 9 National Agricultural Science and Technology Park Construction in Shandong

Location of Parks	Shouguang	Qingdao	Binzhou	Dongying	Yantai	Jining	Taian	Linyi	Dezhou
administrative level	Deputy County	Municipal	County	County	Deputy County	County	Deputy County	Deputy County	Deputy County
Number of business establishments /person	25	13	28	31	20	178	31	28	15
Run by	Government	Government	Government	Government	Government	Government	Government	Government	Government
Model	Sponsored	Sponsored	Sponsored	Sponsored	Sponsored	Sponsored	Sponsored	Sponsored	Sponsored
Batch selected	1st	2nd	3rd	4th	5th	5th	5th	6th	6th
Approval time	2001	2003	2010	2012	2013	2013	2013	2015	2015

From the perspective of administrative structure, Shouguang National Agricultural Science and Technology Park is the first national key agricultural science and technology park in Shandong Province that was approved by the Ministry of Science and Technology in 2001. It is led by the Shouguang City People's Government, and Shouguang Vegetable High-tech Demonstration Park serves as the park. The Administrative Committee of the county, sub-county administrative level, and the establishment of personnel personnel are 25 persons; Qingdao National Agricultural Science and Technology Park is one of the second batch of national agricultural science and technology parks approved by the Ministry of Science and Technology in 2003, Qingdao Jimo Agricultural High-tech Development Zone Management Committee Served as the park management committee, prefecture-level administrative level, staffing 23 people. In general, Qingdao Jimo

National Agricultural Science and Technology Park also belongs to the government-led national agricultural science and technology park; Binzhou National Agricultural Science and Technology Park is one of the third batch of national agricultural science and technology parks approved by the Ministry of Science and Technology in 2010, and is established by the Binzhou Municipal People's Government. As the local competent authority, the Yellow River Delta (binzhou) National Agricultural Science and Technology Park Management Committee served as the Administrative Committee of the Park, with a county-level administrative level and a career establishment of 28 people; Dongying National Agricultural Science and Technology Park was the first approved by the Ministry of Science and Technology in 2012.

The four batches of national agricultural science and technology parks are the hinterland of the Bohai Economic Belt and the Yellow River Delta Efficient Ecological Economic Zone, and are one of the core areas of the Yellow River Delta National Modern Agricultural Technology Demonstration Zone. The Dongying Municipal People's Government is the local competent authority and the Dongying Agricultural High-tech Industrial Demonstration Zone Management Committee serves as the Park Management Committee. It grants the primary financial system and economic and social management authority, and allocates finance, economic development, construction, land, and environmental protection. The national tax and local tax functional departments include the county-level administrative level and 32 staff members; the Yantai National Agricultural Science and Technology Park, the Jining National Agricultural Science and Technology Park, and the Tai'an National Agricultural Science and Technology Park are the fifth batch approved by the Ministry of Science and Technology in 2013.

National Agricultural Science and Technology Park. The Sanjia Park Administrative Committee is a sub-county administrative level. The People's Government is the government-led operating model of the local authorities. The Linyi National Agricultural Science and Technology Park and the Dezhou National Agricultural Science and Technology Park are the sixth approved by the Ministry of Science and Technology in 2015. Approval of the National Agricultural Science and Technology Park. The Linyi National Agricultural Science and Technology Park is the local government agency of Hedong District of Linyi City, Linyi (Hedong) Agricultural High-tech Industry Demonstration Zone Administrative Committee is the main operating entity, and the deputy county-level administrative level has 28 professional development staff; Dezhou National Agricultural Technology The Science and Technology Department of the Shandong Provincial Science and Technology Department is the local competent authority, and the Administrative Committee of the Dezhou Agricultural High-tech Industrial Demonstration Zone

serves as the Administrative Committee of the Park, and the deputy county-level administrative level employs 15 staff members.

The government is in charge of the deputy mayor, and the park has created an industrial chain consisting of three leading industries, namely Jinsixiaozao, potato, and condiment, and three supporting service industries including ecological livestock husbandry, corn deep processing, and modern agricultural logistics. In general, most agricultural science and technology parks in Shandong Province are dominated by government-led operation models.

3 Comparative Analysis of Innovation Capabilities of 9 National Agricultural Science and Technology Parks in Shandong Province

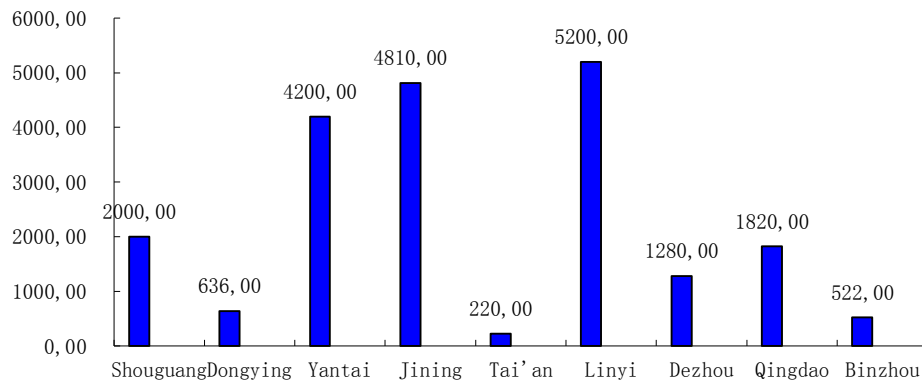
3.1 Sources of data

The data used in this paper is sourced from the park management committees, the local science and technology departments, and the enterprises and institutions providing data in the park.

3.2 Innovation Support

3.2.1 Core Area Built-up Area

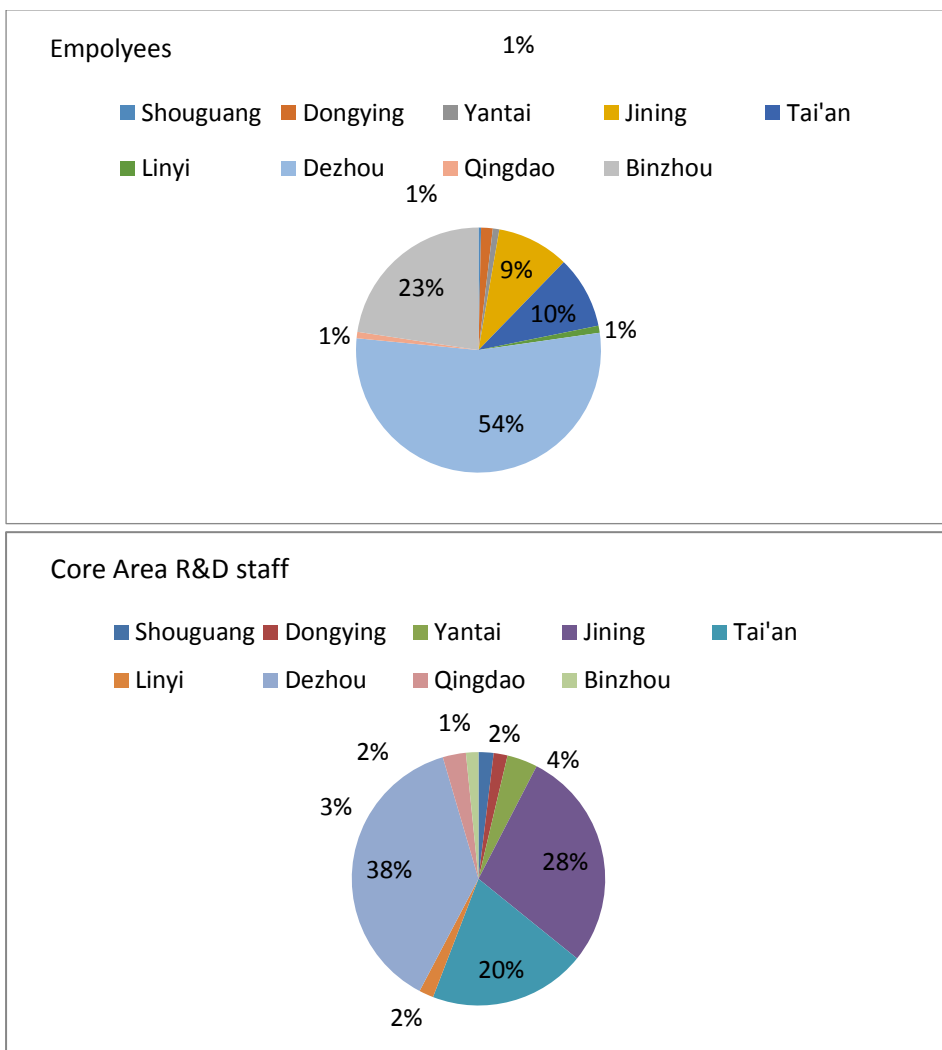
As of the end of 2015, the core areas of agricultural science and technology parks in 9 countries in Shandong totaled 18,346 square meters, of which Shouguang National Agricultural Science and Technology Park 2000m², Dongying National Agricultural Science and Technology Park 636m², Yantai National Agricultural Science and Technology Park 4200m², Jining National Agricultural Science and Technology Park 4810m², Tai'an Country Agricultural science and technology park 220m², Linyi National Agricultural Science and Technology Park 5200m², Dezhou National Agricultural Science and Technology Park 1280m², Qingdao Jimo National Agricultural Science and Technology Park 1820m², Binzhou National Agricultural Science and Technology Park 522m². According to the relevant data in Chart 1, Linyi has the largest core area, followed by the Jining National Agricultural Science and Technology Park, and the core areas of Taian, Binzhou, and Dongying are relatively small.

Figure 1: Distribution of built-up areas in the core areas of 9 national agricultural science and technology parks in Shandong

3.2.2 Human resources

As of the end of 2015, in the field of personnel in the park, the total number of relevant personnel of 9 national agricultural science and technology parks in Shandong Province reached 376. The number of employees in the park in the current year was 237,578, and the number of enterprise scientific and technical personnel reached 14,832. The total number of experts employed by the company reached 1122 people, the 2015 annual new resettlement employment reached 30,166 people. As shown in Figure 2, the number of employees in the park in Dezhou and the number of R&D personnel in the core area are all ranked first. The lowest number of employees in the park is the Shouguang National Agricultural Science and Technology Park, accounting for less than 1% of the total. The core of the park is The lowest percentage of R&D personnel in the district is Binzhou National Agricultural Science and Technology Park, accounting for only about 1%.

Figure 2: Distribution of employees and R&D personnel in 9 national agricultural science and technology parks in Shandong



3.2.3 Investment and financing

According to the statistics collected, 9 national agricultural science and technology parks in Shandong Province invested a total of RMB 343,433,470,000 in 2015, of which government funds were 949,591,800 yuan, corporate funds were

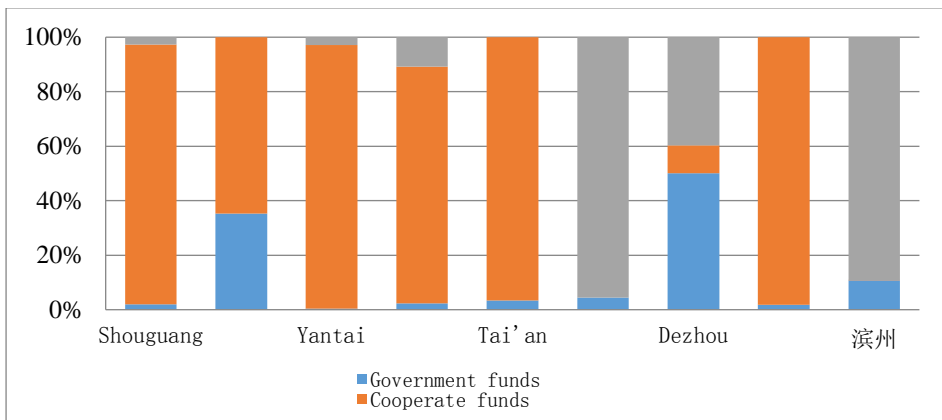
1,959,310,100 yuan, and other social financing was 2,895,150,000 yuan. (See Table 2)

Table 2: Various types of financing for 9 national agricultural science and technology parks in Shandong (ten thousand yuan)

Park	Shouguang	Dongying	Yantai	Jining	Tai'an	Linyi	Dezhou	Qingdao	Binzhou
Government funds	992.2	26057.98	320	43900	2874.5	1540	12600	1810	4865
Cooperate funds	49302.98	47798.52	66293.72	1615388	80484.3	0	2600	97457	5.1635
Social financing funds	1360	0	2006	202689	0	33460	10000	0	40000
Total investment	51655.18	73865.5	68619.72	1861977	83358.8	35000	25200	99267	44870

Secondly, the proportion of corporate capital investment in 6 national agricultural science and technology parks such as Shouguang, Dongying, Yantai, Jining, Tai'an and Qingdao is higher than the proportion of government funding and social financing, and only the government funds of the Dezhou National Agricultural Science and Technology Park Investment is higher than the proportion of corporate funds and social financing funds. The proportion of social financing in the two national agricultural science and technology parks in Linyi and Binzhou is dominant, much higher than the proportion of government funds and corporate funds.

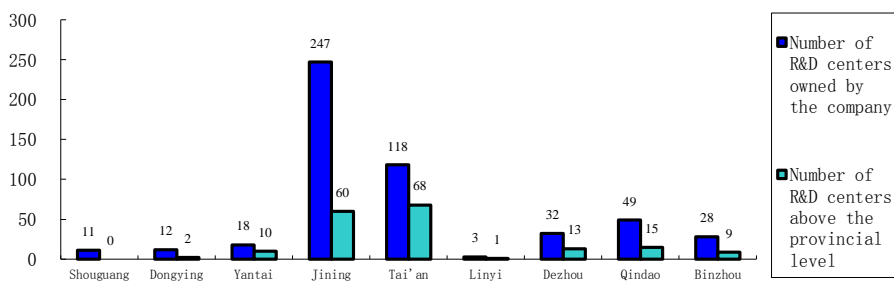
Figure 3: Input distribution of 9 national agricultural science and technology parks in Shandong



3.2.4 R & D center cultivation

As of the end of 2015, there were a total of 518 existing R&D centers in 9 national agricultural science and technology parks in Shandong Province, of which 178 were R&D centers at or above the provincial level. As shown in Figure 4, the number of R&D centers in Jining is the highest, which is 307, including 60 R&D centers at or above the provincial level. The number of R&D centers in Linyi is the smallest, with only 4 R&D centers, of which only one R&D center at or above the provincial level is in a relatively backward position.

Figure 4: Distribution of R&D centers in 9 national agricultural science and technology parks in Shandong

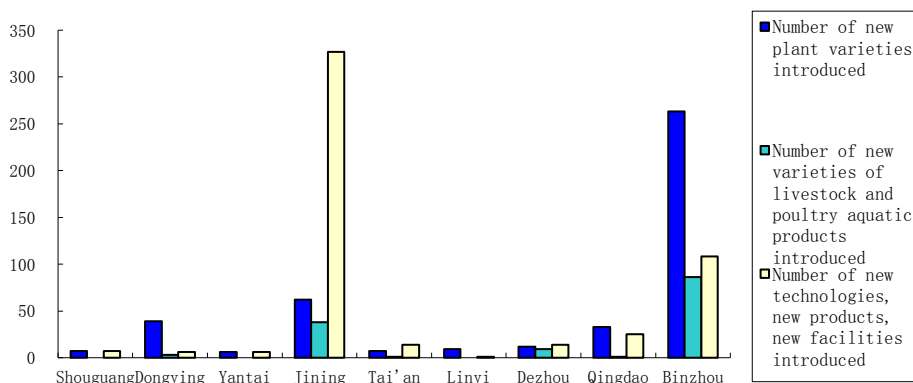


3.3 Innovation level

3.3.1 Technology Development Capability

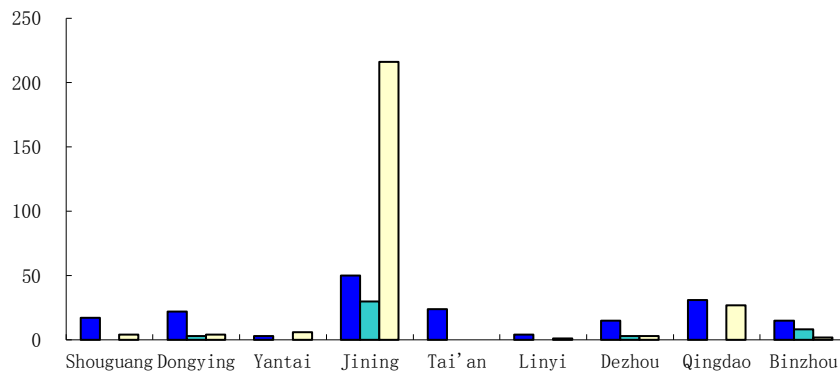
As of the end of 2015, a total of 438 new plant varieties were introduced into the 9 national agricultural science and technology parks in Shandong. In that year, the company introduced 138 new breeds of livestock and poultry aquatic products, and introduced 508 new technologies, new products, and new facilities. Among them, Binzhou ranks the first place in Shandong Province in the introduction of new plant varieties and the introduction of new varieties of livestock and aquatic products, while Jining is ranked first in the introduction of new technologies, new products, and new facilities. As shown in Figure 5.

Figure 5: Scientific and Technological Development of 9 National Agricultural Science and Technology Parks in Shandong Province



3.3.2 Technology Promotion Ability

By the end of 2015, a total of 181 new plant varieties had been promoted in 9 agricultural science and technology parks in Shandong. In that year, the company had promoted 44 new livestock and fishery aquaculture varieties, and had promoted 263 new technologies, new products, and new facilities. Among them, Jining ranks first in Shandong Province in terms of the number of new plant species introduced, the number of new breeds of aquatic products imported from livestock and poultry, and the introduction of new technologies, new products, and new facilities, while Linyi is in a relatively backward position. As shown in Figure 6.

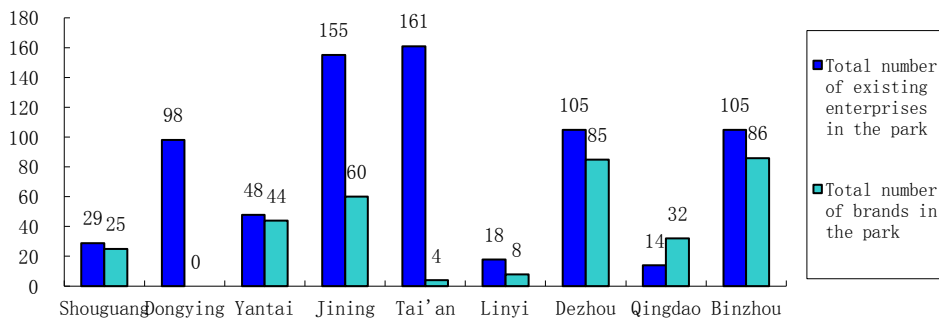
Figure 6: Science and Technology Promotion of 9 National Agricultural Science and Technology Parks in Shandong Province

3.4 Innovation Performance

3.4.1 Park Enterprises and Brand Creation

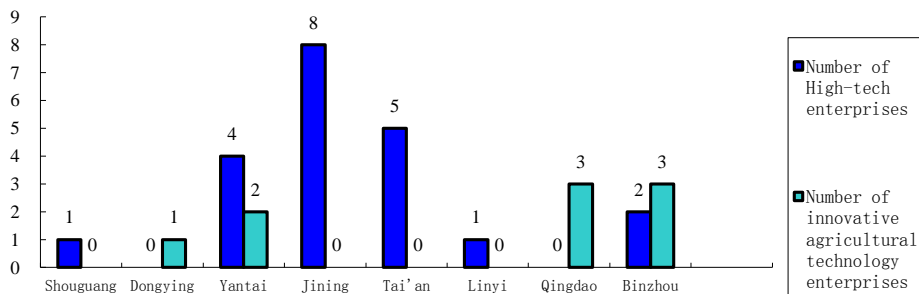
By the end of 2015, there were a total of 733 existing enterprises in the nine national agricultural science and technology parks in Shandong Province (referred to as the core area and the demonstration area). Among the nine parks, the largest number of enterprises attracted enterprises in the Tai'an Park, which numbered 161; Jining Park, 155 The family followed closely; the number of existing enterprises in the Qingdao Park was only 14 and it was relatively backward. In addition, the total number of product brands in 9 parks in Shandong Province was 344, of which Binzhou Park and Dezhou Park had 86 and 85 product brands were at a higher level in Shandong Province. Dongying Park is in a relatively backward position in the number of product brands in the Park. . On the whole, Jining Park is in a comparatively superior position in the area of park enterprises and brand creation. As shown in Figure 7.

Figure 7: Distribution of Enterprises and Distribution of Product Brands in 9 National Agricultural Science and Technology Parks in Shandong Province



3.4.2 Cultivation of Innovative Agricultural Technology and High-tech Enterprises

By the end of 2015, there were 94 technologically innovative enterprises and 16 high-tech enterprises in 733 existing enterprises in 9 agricultural science and technology parks in Shandong Province. Among them, with the exception of the Dezhou region, Dezhou has the highest number of high-tech companies, up to 8; Binzhou has a relatively balanced development, with two high-tech companies, three agricultural technology innovation companies; Shouguang Park, Linyi Park and Dongying Park. It is in a relatively backward position.

Figure 8: Comparison of enterprises entering 9 national agricultural science and technology parks in Shandong Province

3.4.3 Economic benefits

As of the end of 2015, the cumulative output value of the 9 national agricultural science and technology parks in Shandong Province since the establishment of the park was 12,947.12 million yuan, the net profit for 2015 was 10,922.22 million yuan, and the annual foreign exchange earned in exports was 332.975 million yuan. As shown in Figure 9 and Figure 10, the Jining Industrial Park's cumulative total output value of RMB 72,687.27 million and the 2015 net profit of RMB 5.43.37 million were the leading positions; secondly, the Binzhou region's accumulated production value was RMB 2,884,000 and the annual net profit was 203.77 million yuan, which ranked the second; Dezhou Park, Yantai Park, and Qingdao Park were in a stable state of development; and the Dongying Park's 2015 net profit was negative with losses as high as 45.35 million yuan, which is a relatively backward position.

Figure 9: Comparison of annual output value of 9 national agricultural science and technology parks in Shandong Province

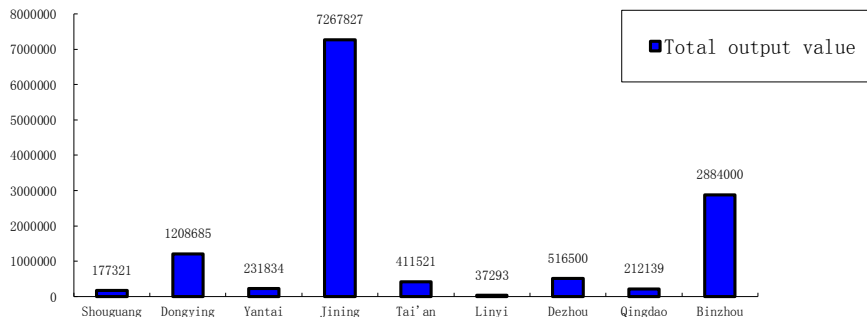
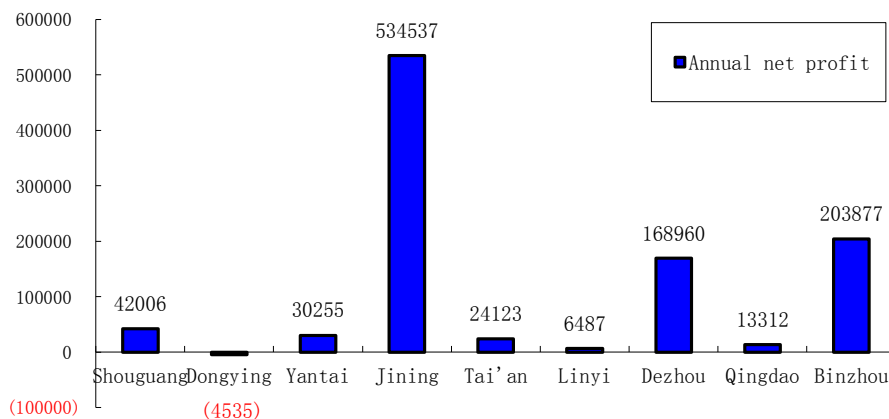


Figure 10: Comparison of Annual Net Profit of 9 National Agricultural Science and Technology Parks in Shandong Province



3.4.4 Technology Services

As of the end of 2015, the 9 agricultural science and technology parks in Shandong Province have successfully held 3131 technical trainings with 138,815 participants, 13,272 visits and inspections with 312,047 visitors. As shown in the figure, with the exception of the Jining Park, the Shouguang Park held 447 technical trainings in 2015 and 1875 visits and inspections in the year, which are all

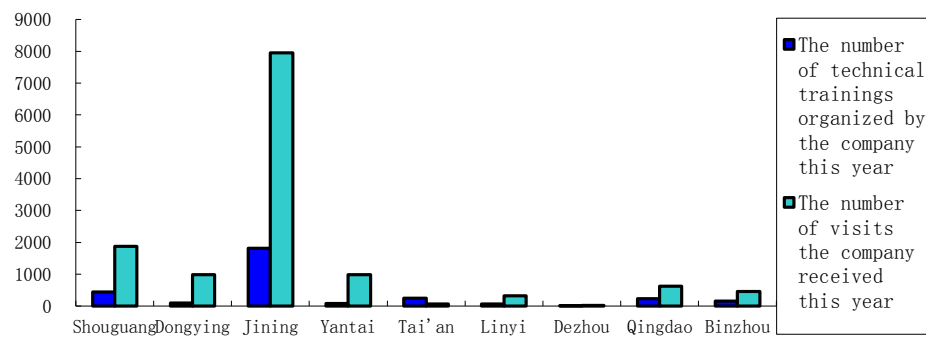
in a leading position; the annual technical training in Jining Park was 138,815, and the total number of visitors to the annual visit was 312047, which overall is in a leading position. Secondly, Dongying Park and Yantai Park are in a stable state of development; while the Dezhou region has held only 10 technical trainings annually and 26 annual visits and inspections, which is a relatively backward position.

4 Problems in the Development of the 9 National Agricultural Science and Technology Parks in Shandong Province

4.1 Government-led operating model hinders the sustainable development of the park

Through the analysis of data on the 9 national agricultural science and technology parks in Shandong Province, the government-dominated model is still the main mode of operation. The Park Management Committee occupies the central dominance of major issues in the park, making the park subject to great restrictions and running against the market of the park. The law has hindered the development of the park to some extent. At present, most parks rely on the preferential policies of the central government and local governments at all levels in terms of resource allocation, which further restricts the use of market measures by the park to fully mobilize existing resources in the park, which is extremely detrimental to the sustainable development of the park.

Figure 11: Technical training and reception visits of 9 national agricultural science and technology parks in Shandong Province

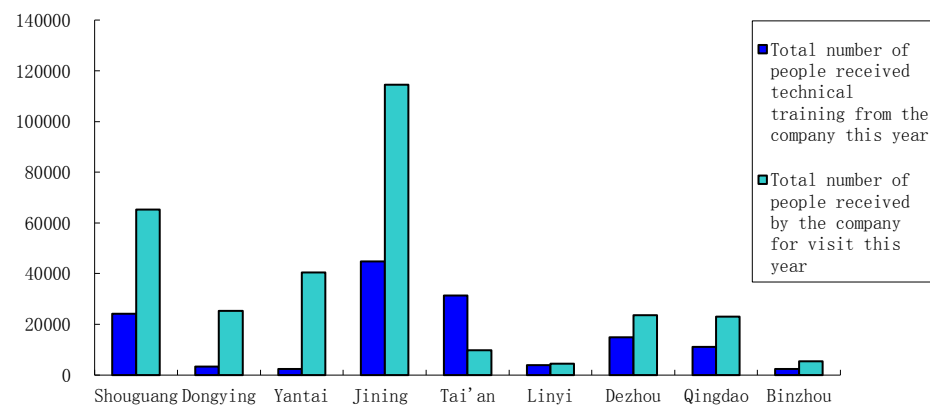


4.2 The mechanism of park investment and financing is not perfect

The nine agricultural science and technology parks in Shandong Province performed well in the overall amount of investment and financing, but most of the parks did not form a complete park investment and financing mechanism. Most of the enterprises in the park are in an independent state, and are separated from the outside world. This seriously affects the establishment of a full-scale investment and financing platform from all sectors of society, greatly reducing the investment and financing capacity of the park, and greatly restricting the development of agglomeration effects of the park industry. The establishment of a comprehensive, multi-level, and multi-field investment and financing mechanism has

become one of the important tasks in the development and improvement of the park's economic construction.

Figure 12



4.3 The characteristics of the park industry are not outstanding

According to the results of the survey, none of the nine agricultural science and technology parks in Shandong Province has systematically established its own characteristic industries. Most of the parks have similar industrial types and similar technological methods, and the extent of the park's own resources potential is extremely low. This has also led to the obstruction of the construction of enterprise clusters in the park, and it has been difficult to give full play to the leading industries to optimize the surrounding agricultural structure and promote industrial upgrading. The construction of characteristic industries to be developed systematically will also further affect the economic development and construction of agricultural science and technology parks and restrict the sustainable development of the park.

4.4 Park Science and Technology Innovation Capacity Needs Substantial Enhancement

Since Shandong Province established the first agricultural science and technology park in 2001, Shouguang National Agricultural Science and Technology Park, through the introduction of a large number of advanced agricultural science and technology, the overall strength of Shandong's agricultural industry technology

has been significantly improved, but the overall improvement rate of the technological innovation capacity of nine parks in Shandong Province is at a low level and the development is extremely uneven. As of the end of 2015, the technological innovation capability of Jining Park was at a relatively advanced level, even surpassing the four national agricultural science and technology parks established in Shouguang, Qingdao, Binzhou and Dongying. As a whole, the technological innovation capacity of the Shandong National Agricultural Science and Technology Park represented by the selected nine parks needs to be improved. Most of the parks are still in the development stage.

5 Countermeasures

5.1 Innovation Park Operation System and System to Break Government-Driven Operating Model

In order to break the huge dependence of most of the parks in Shandong Province on the government, the government-dominated operation model has been hampered by the development of the park system and system construction. First, the park administrative management service system should be transformed into an operational service system. Specific measures include: changing policy support areas, methods and strengths, reversing the development path of the park, establishing a linkage leverage mechanism for the role of policies, transforming the government's blood transfusion mechanism into a cooperative hematopoietic mechanism for the society, and secondly, the innovative government's support for the park can be based on The more mature park development effectiveness evaluation standards provide different support for different parks in different stages of development, implement different support policies for different development parks, and use government functions accurately and effectively. In addition, the promotion of the park management system to achieve "government affairs, services, services," the separation of the government only in the investment promotion, land transfer, production subsidies, overall marketing, infrastructure and other aspects to give a certain boost, in particular, improve the efficiency of land transfer, innovation Land transfer model to solve the follow-up issues of land transfer.

5.2 Promote the diversification of the park to build and develop

In order to solve the problem of imperfect investment and financing mechanisms in most of the parks in Shandong Province, the construction of a diversified park investment and financing system supported by government investment, supplemented by funds from enterprises, financial institutions, and social funds will become an important direction for the development of the park. We can adopt the establishment of a bank-enterprise forum to promote bank-enterprise exchanges; regularly organise technology parks in agricultural parks with financing intentions to hold discussions with relevant financial institutions; set up an information sharing platform for connecting companies and financial institutions; and organize park business results fairs to enhance Financial institutions understand the scientific and technological achievements and market prospects, promote scientific and technological innovation and the industrialization of scientific and technological achievements; use the Internet platform to increase publicity of the park's

environment and park characteristics; in addition, they can further enrich the diversity of the park through Internet finance. The development and development of the system of investment, finance and financing, such as the combination of crowdfunding and other forms of Internet finance, with the small-scale financing projects in the park, and the “Internet +” transformation and upgrade.

5.3 Adapting measures to local conditions and guiding the development of characteristic industries in the park

Parks in different geographical environments and in different construction periods have different development foundations and obstacles. The development of special industries in the park according to local conditions will greatly enhance the economic development capability of the park. Therefore, universities, research institutes should be actively involved in the area survey of the surrounding areas of the park to discover and fully mobilize the maximum potential of the park's surrounding environment to provide the correct direction for the construction of the park's characteristic industries. At the same time, it is also possible to build a professional park through agricultural science and technology. The cooperative organization serves as an opinion leader to guide the farmers to arrange the varieties and quantities of the farmer's production according to market demand and local characteristics, and to organize acquisitions and listings in a planned manner so as to effectively avoid the blindness of production and operation and maximize the use of the park's territory. Advantages; In addition, in the development of the park's own specialty industry, the construction of cooperative relations with other regional parks can not be ignored, and should fully utilize the good cooperation with other parks to consolidate the development of its own characteristic industries.

5.4 Application platform thinking to enhance the scientific and technological innovation capability of the park

In order to enhance the scientific and technological innovation capability of the park, we can fully use the platform thinking. The “production, study and research” platform is set up, and through the establishment of a tripartite cooperation platform connecting the park, government, and universities, the efficient use of resources can be achieved. While promoting the development of the park, it also provides resource support for the development of universities and provides more concrete and reliable for the formulation of government policies. Reference, three-way win-win situation; build information platform of Shandong Agricultural

Science and Technology Park, improve Shandong's agricultural information network system and agricultural information resources database, promote cooperation and win-win in the province's park will also enhance the overall level of agricultural science and technology in Shandong Province; set up the park Talent introduction platform. The park can establish a good cooperation relationship with universities and scientific research institutions by organizing talent cooperation training programs, and attract a large number of talents in agricultural science and technology, economic management, etc. to join the construction and development team of agricultural science and technology parks for the sustainability of the park. Development provides strong personnel support.

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Part 2 Sectoral Analysis

L Talent management: A benchmark of travel retail organization in United Arab Emirates – An Alternative?

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Abstract

Human capital constitutes the backbone of any organization. They play a crucial role in the value creation and success formula. Human resource contributes in the economic development of a nation. Unlike the past, today's talents have begun to realize the importance of work-life balance. The diverse sectors of the organization prepare workforce to adapt to change and innovation. This study examines the talent management which contributed to the performance and productivity of manpower of one of the world's biggest travel retail organizations in the United Arab Emirates. The descriptive method was utilized and a sample size of two hundred (n=200) was ascertained. The study also employed series of in-depth interviews as part of data gathering and analysis. The re-search findings revealed that talent management practices in the travel retail organization were effective from job involvement, training and development, performance appraisal and positive reinforcement among personnel in the organization. The strategic workforce planning provided organizational effectiveness and enhanced human resource capability. The data served to human resource practitioners as a guideline in retooling and formulating policies to effect change and continuous improvement in addressing the talent gaps of hiring and promotion decisions of organizations.

Keywords: Talent management , travel retail organization, United Arab Emirates;

1 Introduction

Organizations regularly engage in talent management as they consider it a necessity however, in order to derive the best out of the human resource development investment, it is essential that it is done in a strategic manner so as to achieve organizational goals and objectives as well as enhancing employee performance accordingly.

Unlike in the past, today's personnel have begun to realize the importance of job satisfaction and good working condition, without which talents would not perform well. A job without work and life balance lead to burnt-out employees, thereby affecting overall quality of performance.

Satisfied and happy employees contribute to the attainment of organization's aspirations. A climate of mutual understanding and interdependence between the management and its employees served as instrument for high efficiency and productivity in the organization. This paper focus on talent management practices that affect important sources of job satisfaction and happiness among employees.

The following objectives of the study:

- a) To describe the talent management practices of the travel retail organizations in United Arab Emirates;
- b) To determine the effects of talent management practices of the travel retail organizations in United Arab Emirates and
- c) To propose relevant talent management programs for the travel retail organization in United Arab Emirates.

2 Review of Related Literature

Managing talent is a set procedures and processes that translate an organization's talent creed and strategy into a diagnostic and implementation program for achieving organizational excellence (Berger, L. and Berger, D., 2011)

Living up to the many expectations of society, fellow associates and clients has increasingly become an essential organizational success requirement today (Popcorn, 1991; Kaufman, 1998). As a response to the ever increasing demand that exists both externally and internally related to "training need assessment" is being recognized as a mainstay in present organizational management. Public and private sectors both are making huge strides towards prioritizing and identifying problems that exist in performance, resource requirement and intervention requests. Training Needs Assessment (TNA) is thus considered, according to Leigh, et.al. (2000) as being the first step towards intervention in Human Resource Development.

Tschohl (1999) and Messmer (2001, 2002) claim that employees who exhibit high morale are the once who do not rely on management to encourage their growth and provide satisfactory work environment, but who are proactive in assessing their professional and emotional work needs and take steps to see that those needs are met.

In contrast, in a survey conducted by McKinsey & Company on motivating people, it summarized top three (3) motivators that make employees satisfaction remarkably high and are to be expected from management. With a total response of 1,047 from executives, managers and employees around the world, and with more than a quarter of the respondents were corporate directors and CEO's or other C-level executives, the results show that employees value as much these non-financial motivations as follows: (1) praise from immediate managers, (2) leadership attention (for example, one-on-one conversation) and (3) a chance to lead projects or task forces. These are no less or even more effective motivation than highest-rated financial incentives such as bonuses, increased base-pay and stock options. The survey's top 3 non-financial motivators play important roles in making employees feel that their companies value them, take their well-being seriously and strive to create opportunities for career growth.

3 Methodology

The quantitative research was utilized and sample size of two hundred (n=200) was ascertained on this study. The study also employed series of in-depth interviews as part of data gathering and analysis. Multivariate logistics regression was used to find the independent factors that determine the various components of talent management in the travel retail organization in United Arab Emirates.

4 Findings/Discussions

The following are key research findings as to talents' attitude on various talent management practices:

a) Job Involvement

Table 1 manifests respondents who are cognitively engaged on their jobs and 65% of the 200 samples in the study showed medium to high job involvement and only 35% of the talents show low job involvement.

Table 1: Percentage distribution of the sample according to job involvement

Job Involvement	Count	Percent
Low	70	35
Medium	69	34.5
High	61	30.5

b) Training and Development

As far as enhancing the human capital's ability to perform through training and development, table 2 reveals that 78% of the respondents at the travel retail organization had a mid-high level of source of positive reinforcement in availing training and development. The remaining 22% of the samples availed a low training and development engagement.

Table 2: Percentage distribution of sample according to Training & Development

Training and Development	Count	Percent
Low	44	22
Medium	101	50.5
High	55	27.5

c) Working Condition

Table 3 represents the working environment affecting the workplace and it shows that most of the respondents 70% have mid-high regards of the working conditions in the travel retail organization. Only 30% of the samples have low regard on the working condition of the organization.

Table 3: Percentage distribution of sample according to Working Conditions/Motivation

Working conditions/motivation	Count	Percent
Low	60	30.0
Medium	57	28.5
High	83	41.5

d) Performance Appraisal

Table 4 shows the overall reviews of the employees' contributions to the organization through Performance Appraisal and generally 64% of the respondents have mid-high score. The performance appraisal is low according to 26% of the respondents.

Table 4: Percentage distribution of the sample according to performance appraisal

Performance Appraisal	Count	Percent
Low	51	25.5
Medium	68	24.0
High	81	40.5

e) Line Manager-Team Member Relationship

Table 5 is evident that there is a teamwork as majority of the respondents 80% believe that there is a strong line manager-team member relationship that brings positive reinforcement among employees and a minority 20% considered it low.

Table 5: Table percentage distribution of the sample according to line manager-team member relationship

Line Manager – Team Member Relationship	Count	Percent
Low	39	19.5
Medium	95	47.5
High	66	33.0

Using Multivariate Logistic Regression

Taking into consideration, the multivariate logistic regression gives an indication of how likely are the different determinants (indicated in the odds outcome numbers greater than 1) in terms of high job involvement, training and development, working conditions, performance appraisal, monetary benefits and line manager team member-relationship.

Table 6: Determinants of high **Job Involvement** (Multivariate logistic regression)

		Beta	S.E.	Sig.	Odds
Gender (Male R)	Female	2.08	0.62	0.001	8.01
Age (.30R)	<=30	3.25	0.78	0.000	25.83
Qualification (Below degree R)	Others	1.90	0.62	0.002	6.69
Designation (Sales assistant, R)	Others	1.24	0.61	0.041	3.45
Experience (>=5 yrs R)	<5 yrs	3.07	0.73	0.000	21.59
Monthly income (<3000R)	3000-5000	2.42	0.70	0.001	11.29
	>5000	1.69	0.77	0.028	5.41
Nationality (Filipino R)	India	-0.09	0.80	0.915	0.92
	Others	1.28	0.53	0.016	3.61
Marital Status (Married R)	Single	0.34	0.56	0.543	1.41
Number of dependents (Nil R)	Nil	1.22	0.79	0.122	3.38
	1-2	0.21	0.84	0.802	1.23

Table 6 result indicates an interesting data that the gender of employees in a travel retail organization have a significant influence on the job involvement ($p < 0.01$). This means that with reference to the male employees of the organization, the female talents show more involvement in job at their workplace. The odds ratio (8.01) shows that the female employees have eight times more high job involvement than male personnel.

The age of employees (especially those less than 30 years) also have a significant influence on high job involvement ($p < 0.01$) and one can understand from the odds ratio that those employees who are less than or equal to 30 years of age have 26 times more job involvement than those who are greater than 30 years of age. Similarly, it can also be seen from the table that those employees who have qualifications of degree and above ($p < 0.01$) have 7 times high job involvement with reference to those whose qualifications are below the appropriate degree qualification.

The employees at travel retail organization who are at the supervisory and managerial levels ($p < 0.05$) have 3 times more involvement in their jobs than the Sales Assistants. Again from the table values it is clear that the respondents who have more than or equal to 5 years experience ($p < 0.01$) have 22 times more high job involvement with reference to those staff who have less than 5 years of experience.

With reference to the employees who have a monthly income of less than AED3000, it is found out that those employees who have a monthly income between AED3000-AED5000 ($p < 0.01$) and greater than AED5000 ($p < 0.05$), have 11 times high job involvement and 5 times high involvement in their jobs respectively. From the table values it is clear that among the respondents under study, those employees who come from nationalities like Morocco, Gulf Cooperation Council countries, Kenya, ($p < 0.05$) have 4 times more job involvement than the Indians and Filipino nationalities.

On the other hand the table values show that marital status ($p > 0.05$) and number of dependents ($p > 0.05$) of the employees do not have any significant influence on the job involvement of the employees at travel retail organization.

Table 7: Determinants of high Training and Development (Multivariate logistic regression)

		Beta	S.E.	Sig.	Odds
Gender (Female R)	Male	0.04	0.47	0.925	1.05
Age (.30R)	<=30	0.01	0.49	0.984	1.01
Qualification (Degree & above R)	Below degree	1.95	0.43	0.000	7.02
Designation (Others R)	Sales Assistant	0.22	0.59	0.706	1.25
Experience (>=5 yrs R)	<5 yrs	1.50	0.54	0.005	4.49
Monthly income (<3000R)	3000-5000	0.41	0.48	0.401	1.50
	>5000	0.19	0.61	0.759	1.20
Nationality (Filipino R)	India	-0.54	0.57	0.339	0.58
	Others	0.88	0.45	0.052	2.41
Marital Status (Married R)	Single	0.64	0.51	0.21	1.89
Number of dependents (Nil R)	1-2	0.37	0.44	0.41	1.44
	>=3	0.41	0.61	0.504	1.51

From table 7 the authors understand that the gender and the age of the employees at travel retail organization does not have any significant influence on the training and development in the organization, ($p > 0.05$, $p > 0.05$ respectively). The employees under study at the organization whose qualification is less than the degree required or qualification standard ($p < 0.01$) has 7 times more training and

development involvement when compared to the respondents whose degree qualification is above the standard.

It can be inferred from the table values that the respondents under study at travel retail organization, those who have less than 5 years of work experience ($p < 0.01$), have 4 times more training and development than those who have greater than or equal to 5 years of experience. From the table values it can be clearly understood that designation of the employees, their monthly income, nationality, marital status and number of dependents ($p > 0.05$) does not have any significant influence on the training and development in the organization.

Table 8: Determinants of high **Working conditions** (multivariate logistic regression)

		Beta	S.E.	Sig.	Odds
Gender (male R)	Female	1.17	0.44	0.007	3.23
Age (.30R)	<=30	0.34	0.44	0.449	1.40
Qualification (Below degree R)	Degree & above	1.00	0.44	0.023	2.72
Designation (Others R)	Sales as-sistant	2.14	0.67	0.001	8.47
Experience (>=5 yrs R)	<5 yrs	1.97	0.46	0.000	7.19
Monthly income (<3000R)	3000-5000	0.17	0.50	0.732	1.19
	>5000	0.77	0.56	0.173	2.15
Nationality (Others R)	Filipino	1.40	0.51	0.006	4.05
	India	0.99	0.61	0.102	2.70
Marital Status (Married R)	Single	0.70	0.44	0.116	2.01
Number of dependents (Nil R)	Nil	0.37	0.54	0.493	1.45
	1-2	0.03	0.57	0.954	1.03

The values of the given table indicates that the gender of the employees at travel retail organization has a significant influence on the working conditions prevailing at the entity. It manifests that the female staff ($p < 0.01$) perceived the working conditions to be 3 times more motivating and morale booster than their male counterparts. For those employees at the organization whose qualification is

degree holder and above ($p < 0.05$) the conditions at work have a positive reinforcement at which is 2 times more than those who are below degree holder.

The talents at the managerial and supervisory levels, the Sales Assistants ($p < 0.01$) have 8 times positively reinforced on the working conditions. When compared to the respondents who have less than 5 years of experience, those who have five and more years of experience at the organization ($p < 0.01$) have 7 times more high opinion about their working conditions.

The table shows that when compared to other nationalities at travel retail organization, the Filipino employees ($p < 0.01$) have 4 times more high opinion about their working conditions. As a whole perspective, it is clear from the table that the other variables like age, monthly income of the respondents, marital status and number of dependents does not have any influence on the working conditions at the organization. ($p > 0.05$)

Table 9: Determinants of high Performance appraisal (Multivariate logistic regression)

		Beta	S.E.	Sig.	Odds
Gender (Female R)	Male	0.33	0.39	0.397	1.39
Age (.30R)	<=30	0.65	0.40	0.102	1.92
Qualification (Below degreeR)	Degree & above	0.08	0.38	0.824	1.09
Designation (Others R)	Others	0.05	0.46	0.916	1.05
Experience (>=5 yrs R)	<5 yrs	0.63	0.41	0.121	1.88
Monthly income (<3000R)	3000-5000	0.23	0.43	0.596	1.26
	>5000	1.01	0.51	0.050	2.74
Nationality (Others R)	Filipino	0.53	0.41	0.193	1.71
	India	-0.05	0.52	0.927	0.95
Marital Status (Married R)	Single	0.08	0.39	0.847	1.08
Number of dependents (Nil R)	1-2	0.51	0.37	0.164	1.66
	>=3	0.61	0.52	0.244	0.55

The table shows that the employees at travel retail organization whose monthly income is greater than AED5000 ($p < 0.05$), that gender of employees, age, qualification, designation, experience, nationality, marital status and the number of dependents (p values > 0.05) do not have any significant influence on the Performance Appraisal of talents in the organization.

Table 10: Determinants of Line Manager Team Member Relationship (Multivariate logistic regression)

		Beta	S.E.	Sig.	Odds
Gender (Male R)	Female	0.07	0.41	0.864	1.07
Age (.30R)	<=30	0.85	0.39	0.032	2.33
Qualification (Below degree R)	Degree & above	0.51	0.40	0.209	1.66
Designation (Others R)	Sales Assistant	0.68	0.54	0.207	1.98
Experience (>=5 yrs R)	<5 yrs	0.43	0.42	0.309	1.53
Monthly income (<3000R)	3000-5000	0.54	0.47	0.253	1.72
	>5000	0.51	0.54	0.348	1.66
Nationality (others R)	Filipino	0.07	0.43	0.861	1.08
	India	-0.12	0.54	0.829	0.89
Marital Status (Single R)	Married	0.05	0.40	0.895	1.05
Number of dependents (Nil R)	1-2	-0.27	0.39	0.500	0.77
	>=3	0.38	0.49	0.437	1.46

The table value shows that the age of the respondents have a significant influence on the Line Manager Team member Relationship at the travel retail organization. With reference to the male counterparts, the female counter parts ($p < 0.05$), have 2 times higher level of Line Manager Team Member relationship. It may be inferred from the table that the other socio demographic variables like Gender of the talents, their Qualifications, Designation, Experience, Monthly income, Nationality, Marital Status and their number of dependents does not have any significant influence on the Line Manager Team Member Relationship of the employees ($p > 0.05$) at the organization.

5 Summary and Conclusion

Key findings pointed that the travel retail organization involved in the study employ traditional talent management approach . The organizational factors found out to be highly motivating and morale-builder. Those with <5 years of experience found to have received 4 times more training and development engagement than those with ≥ 5 years of experience. Group dynamics found to be significant among employees whose age >30 years, who met the qualification standard and above and who had ≥ 5 years of experience. Working conditions found to be significantly high for those employees above 30 years of age. Performance appraisal found to be highly significant among those who met the qualification standard, while there was no significant relationship on socio demographic variables and their attitude towards motivation and job engagement. Strategic talent planning that promotes organizational effectiveness, leader effectiveness, and performance management is proposed to enhance human resource capability.

To have a sustainable human capital in one of the world's biggest travel retailer organization the following recommendations were drawn: A) A clear understanding of the organization's current and future business strategies, B) Identification of the key gaps between the talent in place and the talent required to drive business success, C) A sound talent management plan designed to close the talent gaps and be integrated with strategic and business plans. Furthermore, development of talent to enhance performance in current positions as well as readiness for transition to the next level be enhanced. The focus does not dwell on the talent strategy itself, but the elements required for successful execution so as to continue to develop team synergy, business impact and workforce effectiveness .

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Part 2 Sectoral Analysis

M Study on the Influencing Factors of Rural Bank's Operating Performance: Based on the Survey Data of Shandong Province

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Abstract

New rural financial institutions such as village and township banks to a large extent shoulder the policy mission of success or failure of a new round of rural financial reform, but still face many problems in the development process, its market positioning, development philosophy, governance structure, propositions such as business performance and influencing factors need to be effectively solved. Based on the survey data of some villages and towns banks in Shandong Province, this paper based on the analysis of the development situation of rural banks and built a business performance evaluation model and conducted empirical research on the factors that influence performance. The results show that the operating performance of rural banks is in conflict with the behavior of farmers' loans; properly increasing the asset-liability ratio helps rural banks to improve business performance; talent quality is an important factor affecting the development of rural banks; and the county's economic development is relatively low (high). However, the comprehensive management performance of rural banks was relatively good (poor). Finally, based on the research results, the countermeasures and suggestions are proposed.

Keywords: Rural Bank Performance Evaluation Influencing Factors

1 Introduction

The phenomenon of financial repression and financial exclusion has made China's rural financial market reforms always have strong internal demand and policy innovation. In the face of the new rural economic situation, based on the goal of effectively increasing rural financial supply and improving financial efficiency, the China Banking Regulatory Commission issued in December 2006 "adjusting and relaxing the access policy for banking financial institutions in rural areas to better support the new socialism". Several opinions on rural construction, and in the following short period of time introduced a series of supporting rural financial reform policies, and announced the formal implementation of the new rural financial policy. Promoting the establishment and development of new rural financial institutions such as village and town banks is the core content of this round of reforms. The emergence of new-type rural financial institutions is the result of the long-term evolution of rural financial systems. It is an inevitable product of the contradictory development between the lack of rural financial supply and the large-scale demand for financial resources from the development of "three rural issues". In the dual role of policy promotion and market demand, rural banks have been able to develop rapidly. As of the end of 2014, there were 1207 corporate rural banks in China, with 3,080 banking outlets. The new-type rural financial institutions have gradually highlighted the role of the fresh force in the rural financial market from the early stage of the "squid effect". However, practice has proven that rural banks still face many problems in the business process, and their propositions such as market positioning, development philosophy, governance structure, business performance, and influencing factors need to be solved effectively. Innovation and sustainable development are of concern.

Along with the rapid development of new rural financial institutions such as village and town banks, domestic related research has also been continuously enriched, mainly focusing on institutional performance, problems and counter-measures in the development industry, market positioning, credit risk, and the path of organizational innovation (Liu Song, Liu Chuntao, 2009). In view of the lack of empirical data and other reasons, research on the performance evaluation of new rural financial institutions is still in its infancy (Zhao Bingqi, Yang Lina, 2013), but some scholars have also made valuable efforts in this regard, and new rural financial institutions such as village and town banks. The management efficiency, performance evaluation and performance influencing factors were studied. Wu Shaoxin et al. (2009) conducted a study on the operating efficiency of rural banks, and concluded that the overall operating efficiency of rural banks in China is currently uneven, and operating efficiency is affected by capital strength, deposit

size, and profitability of main operations. Wu Yuyu (2010) conducted a study on the impact of social networks on the operating performance of rural banks, and concluded that the transmission of social networks through the intermediate channels has a positive impact on the operating performance of rural banks. Ma Xiaoyi (2011) analyzed the factors affecting the performance of rural banks from five aspects: equity structure, asset size, asset structure, asset security, and profit structure. Ge Yongbo et al. (2011) conducted an empirical study on the influencing factors of the sustainable development of new rural financial institutions, and believed that the level of product and service innovation and the quality of employees have important influence on their development. Li Jianhua and He Shasha (2012) took Hubei Province as an example to study the impact of payment settlement channels on the operating performance of rural banks. Zhao Bingqi and Yang Lina (2013) evaluated the performance of the sample village and town banks in terms of self-sustainability, coverage, and social influence on the basis of constructing a framework for assessing the operational performance of rural banks. Dong Xiaolin et al. (2014) conducted an empirical study on the relationship between the establishment of residential and township banks, the types of main sponsors, and business performance, and believe that the above two aspects have a significant impact on business performance.

Foreign academic circles have made in-depth studies on the performance evaluation and sustainable development of small financial institutions (community banks), and are working hard to explore microfinance performance standards that can be used globally (Zhao Bingqi and Yang Lina 2013). For example, Albert et al. (2011) studied the inter-continental differences in community bank performance by constructing a special panel model. The results show that regional economic characteristics, population structure, and market structure all have significant effects on the performance of small-sized financial institutions such as community banks. influences. Kashian & Tao (2014) conducted in-depth research on the off-balance sheet business, business performance and risks of community banks.

Shandong Province is a major province of China's economy and a major province of agriculture. Rural economy and rural financial development have a strong representation in the country. As of the end of 2014, there were 86 village and town banks established in Shandong Province, ranking first in the country (only 39 in the same period). Based on the analysis of the basic development situation of the country's rural banks, this paper uses the survey data of 14 village banks in Shandong Province to construct a model for evaluating the operating performance of rural banks, and conducts empirical research on the factors that influence performance, with strong representation and practical significance.

2 Village Bank Development Trends and Existing Problems

2.1 Development of Village Banks

With the implementation of the new rural financial policy in China, the first rural bank was approved in February 2007. After the slow development period of the past three years, the village and town banks have entered a stage of rapid development in recent years. In terms of quantity, as of the end of 2010, only 285 legal person village banks were approved to establish nationwide, and by the end of 2014, the number of legal persons reached 1,207, an average of 230 per year; from the perspective of loan size, the nationwide village and town banks issued loans at the end of 2010. The total amount is about 59.7 billion yuan, and by the end of 2014, the index reached 486.2 billion yuan, and the number of loans issued during the period increased by an average of more than 1,000 billion yuan each year. From the perspective of loans, as of the end of 2014, the loans granted to rural households and small and micro enterprises by the village and township banks were as of the end of 2014. The balance totaled 451.6 billion yuan, accounting for 92.9% of the total loan balance. From the perspective of absorbing private capital, more than 4,000 corporate shareholders and 8,000 natural person shareholders have invested in rural banks, becoming an important channel for private capital investment banking.

The establishment of the village banks in Shandong Province was relatively late. In November 2008, the first village bank, Shouguang Zhang Rural Commercial Bank was opened. At the end of 2010, the number of rural banks was only nine, which was lower than the average level of the provinces in the country. The number of rural banks in the provinces Jiangsu and Zhejiang, both in leading positions, reached 19, and the development of rural banks in Shandong Province lags behind. However, after 2011, the development speed of the village banks in Shandong Province has improved significantly. At the end of 2014, the number of rural banks established in Shandong Province has reached 86, ranking the first in the country, while the average national level for the same period was only 39, and Jiangsu and Zhejiang provinces had 67 and 71 respectively; from the loan amount, the end of 2010 in Shandong Province The total amount of loans issued by banks was 1.9 billion yuan, which was close to the average level of the provinces in the same period of 1.93 billion yuan. After several years of rapid growth, at the end of 2013, the total amount of loans issued by village and town banks in the province reached 19.1 billion yuan (among which, the balance of agriculture-related loans was 17 billion yuan, accounting for 89%). During the period, the average annual growth rate was about 116%, and the national average over the same period. For 11.8 billion yuan, the average annual growth rate is about 83%,

and the average annual growth rate of Jiangsu and Zhejiang provinces is about 76% and 53% respectively.

2.2 Main problems in the development of rural banks

2.2.1 Unbalanced distribution of rural banks, deviating from the original intention of the policy

As of the end of 2014, a total of 3,080 village and bank outlets (including branch offices, including 1,207 corporate entities) have been operating in the country, but there are large differences among regions. The number of outlets in Henan Province reached 251, followed by Zhejiang and Shandong provinces with 225 and 217 respectively, and Liaoning, Guangxi, Sichuan, Jiangsu, Guangdong, and Anhui provinces had more than 159 outlets. The above nine provinces and districts accounted for nearly 60% of the total number of villages and towns in the country. In the same period, there were only 1 and 2 village and town banks in Tibet and Qinghai respectively. The gap between the provinces is relatively large and the distribution is extremely uneven.

According to statistics from the eastern, central and western regions of the country, there are 1,235 rural bank outlets in the eastern provinces, accounting for 40% of the total, and 906 rural and rural banks in the central region, accounting for 29%, and 939 in the western region, accounting for 31% of the total. It can be seen that the rural banks in the developed eastern coastal areas account for a relatively large proportion, while the number of rural banks in the economically backward western regions is relatively small.

From the perspective of the country's impoverished counties, there are currently 592 state-level poverty counties, which are mainly concentrated in the central and western regions. Among all provinces, there are 73 in Yunnan Province with the highest number of impoverished counties, accounting for 12.3%, followed by 50 in Guizhou and Shaanxi respectively, accounting for 8.4% of the total. However, the distribution status of rural bank outlets in the corresponding provinces is: 67 in Yunnan Province, accounting for 2.2%, 105 in Guizhou Province, accounting for 3.4%, and 22 in Shaanxi Province, accounting for 0.71%, further verifying the fact that the village banks are reluctant to establish themselves at remote and economically backward areas, which has a divergence from the original intention of the country's policy of establishing rural banks.

2.2.2 Equity setting is constrained by policy, governance structure and governance mechanism need to be optimized

The China Banking Regulatory Commission requires that the largest shareholder or only shareholder of a rural bank must be a banking financial institution. Although the minimum ratio of the main initiating bank holdings has been reduced from 20% to 15% since 2012, it was found in the survey that most of the main initiating banks held more than 50% of their shares, while other shareholders had a smaller shareholding.

The establishment of rural banks by banking financial institutions may help rural banks to develop their businesses quickly in terms of operating experience, product design, technology, and talent support, and avoid the risks caused by the lack of operational experience of rural banks. However, in practice, the ratio of shares held by the main initiating banks is too high. This will inevitably lead to rural banks' corporate governance model naturally become a rigid institutional arrangement to safeguard the interests of banking financial institutions (Wang Jian'an, 2010), which restricts the optimization of the ownership structure and governance structure of rural banks and affects the development of rural banks in the follow-up business, and the formation of endogenous incentive mechanisms in the process. First of all, for the main initiating bank, in view of the constraints of the current operating environment of the rural financial market, the enthusiasm and impetus for the establishment of rural banks for commercial banks seeking to maximize profits have been insufficient. Initiating the establishment of rural banks is mainly based on strategic intentions of the market layout and long-term planning. If the ratio of holdings is too low to impose absolute control on rural banks, this effect will be greatly reduced, and thus lead to obvious "one and only big share" phenomenon. Secondly, the proportion of shares held by the main initiating bank is high, resulting in de facto "insider control". The mutual check-and-balance mechanism of shareholders is weakened or even missing. The efficiency of bank governance and the protection mechanism for the interests of small and medium shareholders need to be improved and improved. Third, the policy requirements of the proportion of equity ratios of village and town banks and the tendency of ownership setting of the main initiating bank have led to the impact of rural private capital on the involvement of rural banks, which has greatly weakened the mutual and symbiotic nature between private capital and rural banks. It has restricted the investment channels of private capital, and has also directly affected the potential incentives and business contributions of the shareholder customers and their relationship groups in the business expansion of rural banks. In addition, the high concentration of equity makes it difficult for participating shareholders to effectively perform their internal functions, resulting in private capital losing its capital

injection and participating in governance initiatives. Fourth, the “one and only share” shareholding structure has caused many village banks to be the main branch of the bank. The business objectives and operating policies have been directly affected by the host’s initiating bank, and have even violated the rural bank’s services at its original intention of the establishment, the “agriculture, rural areas and rural areas”, to some extent.

2.2.3 Policy support is not strong, and the development of rural banks needs more assistance

In recent years, the state has gradually introduced a series of support and preferential policies, which have laid the foundation for the healthy development of new rural financial institutions such as village and town banks. However, as a whole, rural banks are still in their early stages of development. They are small in scale and weak in competitiveness. They also shoulder the historic mission of improving the financial market environment in rural areas and promoting the development of inclusive finance. If they want to build them into the backbone of rural financial markets, then policy support and enforcement are still insufficient. For example, in the first three years of the implementation of the new rural financial policy, financial support and preferential tax policies for new-type rural financial institutions have not been put in place in time, which has affected the rapid development of rural banks, resulting in a disparity in the number and scale of rural banks compared with the expected target. In 2010, the government formulated the fiscal subsidies for rural financial institutions such as village and township banks to implement targeted cost subsidy policies. However, these subsidy policies cannot be obtained without reaching the prescribed conditions, and it is difficult to fully and effectively achieve the policy goals of “helping the weak to help the poor and fair competition”. In addition, the subsidy funds have been included in the income accounting of financial institutions, and the corresponding income tax collection has greatly reduced policy support. Since 2009, the central bank has extended the re-finance of agricultural loans to rural banks. However, it has not implemented targeted tilting policies and the asset size is small. The amount of refinancing for rural banks used by rural banks was limited; for the 25% income tax rate, it was only clarified that “the interest income of small-sum loans of financial institutions for financial institutions is calculated as 90% of total income when calculating taxable income. There are no other income tax incentives.

2.2.4 The rural financial ecological environment is not perfect, and the development of rural banks is facing difficulties

First, the construction of rural credit bad environment system lags behind. The credit system of rural households and rural enterprises is not perfect, and the customers faced by rural banks are lack of comprehensive credit records, and rural residents do not attach enough importance to credit and credit awareness is weak. Second, farmer households generally lack assets that can be used for mortgages. The trading market for land contracting rights and the transfer of the right to use have yet to be established and improved. There are inherent flaws in the joint-guarantee mechanism of farmers and it is difficult to implement the breach of contract. Third, the agricultural insurance system is still not perfect, and rural banks face greater risks in relation to agricultural financial services.

2.2.5 Village banks have many problems in themselves, affecting sustainable and healthy development

First, the financing channels are narrow, it is difficult to absorb and store, and business development is limited. The reasons are as follows: First, the brand's social awareness is low, and its competitive strength is weak; Second, the establishment time is short, business outlets are few, and convenience for rural customers is not enough; Third, according to policy requirements, rural banks are often established in economic development. In counties and villages where the level is not high, there are few private funds, and the amount of farmers' deposits is limited.

Second, the level of business services is low and the ability to innovate is insufficient. Although the service standards of rural banks have been greatly improved in recent years, some rural banks have launched online banking and bank card services and set up basic facilities such as POS machines. However, overall, the types of financial products are still relatively small and the business is relatively simple. The depth and breadth are obviously insufficient. At present, the business of rural banks is mainly based on traditional deposits and loans, and intermediary businesses such as agency, wealth management, and information consulting are lagging behind, and their business innovation capabilities are low. Therefore, personalized products that are close to customers and reflect their characteristics cannot be launched in time to meet the ever-developing diversified financial needs of rural customers.

Third, the shortage of professionals has become a bottleneck restricting the long-term development of rural banks. First, the number of professionals is small, and

the proportion of outstanding talents with financial institution management and business experience or financial expertise is low, and many employees lack understanding and grasp of the rural financial environment and characteristics, and it is difficult to meet the needs of rural banking business development; Second, in view of the rural banks' operating areas and the current brand effect and operating mechanism, the attractiveness of outstanding talents is obviously insufficient, and there is a great difficulty in the construction of talents.

Fourth, the risk control system is not perfect. Judging from the practical operation, VTBs mainly rely on qualitative assessment in terms of risk assessment and early warning. Most rely on traditional experience and simple technical methods, and lack of foresightedness, pertinence, and effectiveness in risk control. In addition, the governance structure of rural banks is relatively simple, and it is easy to trigger moral hazard and operational risks. In particular, the current overall quality of rural bank employees is not high, risk awareness is poor, and risk management experience is lacking, and potential business risks deserve more attention.

3 Construction of Operational Performance Evaluation Model for Rural Banks: Based on Survey Data from Shandong Province

3.1 Research samples and performance indicators

We conducted surveys on 20 rural banks in Shandong Province that had been established for more than one year as of the end of 2013, including 11 on-site research and 9 questionnaires. In view of the confidentiality of the data and other reasons, 14 valid questionnaires were finally collected. These 14 village and town banks are located in Qingdao, Weifang, Jinan, Laiwu, Jinan and other places, covering the three regions of Shandong Province, East and West, and have strong representation.

Based on the research ideas of Jia Haitao et al. (2009) and Ma Xiaowei (2011) and other literatures, combined with the characteristics of rural banks, this paper divides their operating performance indicators into four categories: profitability, safety, liquidity, and development capability. Among them, the profitability indicators often use the return on net assets (the ratio of net profit to net assets), the profit margin (the ratio of net profit to total revenue), the return on total assets (the ratio of net profit to total assets), and the cost-to-cost ratio. (Operating income/Operating cost); Safety indicators include non-performing loan ratio (non-performing loan to loan balance ratio), self-owned capital ratio (the ratio of self-owned capital to total capital) and capital adequacy ratio; And liquidity indicators include the loan ratio (the ratio of total loans to total deposits) and the current ratio (ratio of current assets to current liabilities), etc. The growth indicators often use the loan growth rate (the ratio of loan growth to the previous year's loan balance) and the profit growth rate (the ratio of growth to previous year's profit) and total asset growth (asset growth for the current year/total value at the end of last year).

3.2 Descriptive statistics of operating performance of rural banks

We collated the relevant data of the rural banks surveyed in 2011-2013 and statistically compared the corresponding data of 16 listed commercial banks to observe the operating performance of rural banks. See Table 1 for relevant indicator data.

Table 1: Indicators of Operation Performance of Rural Banks

			2011	2012	2013
Profitability indicators	Return on net assets	village Bank	-3.27%	3.44%	7.70%
		commercial Bank	20.68%	20.52%	19.77%
	Income margin	village Bank	-	22.44%	25.37%
		commercial Bank	39.66%	39.88%	39.37%
	Return on total assets	village Bank	-1.28%	1.00%	1.39%
		commercial Bank	1.21%	1.22%	1.20%
Safety indicators	Non-performing loan rate	village Bank	0.00%	0.00%	0.23%
		commercial Bank	0.76%	0.81%	0.90%
	Capital adequacy ratio	village Bank	46.68%	49.08%	36.99%
		commercial Bank	12.42%	12.87%	11.5%
Liquidity indicators	Current ratio	village Bank	92.95%	87.54%	94.45%
		commercial Bank	42.22%	42.38%	40.60%
	Loan ratio	village Bank	65.76%	84.53%	70.06%
		commercial Bank	68.35%	68.39%	68.52%
Development capability indicators	Loan growth rate	village Bank	-	387.51%	106.11%
		commercial Bank	18.09%	16.82%	14.38%
	Profit growth rate	village Bank	-	391.61%	285.00%
		commercial Bank	38.71%	23.62%	15.01%
	Total asset growth rate	village Bank	-	93.76%	100.11%
		commercial Bank	22.60%	21.79%	14.30%

Source: Own calculation.

3.2.1 Profitability index

First of all, from the three yield ratio indicators of the village and town banks, the average value of the samples has increased year by year, and the growth rate is faster. On the one hand, it shows that the use efficiency and profitability of village and town banks are steadily improving. On the other hand, it also shows that the country's support effect on rural banks has gradually become or has improved. In 2011, the three yield ratios of the village and town banks were all negative, indicating that it is very difficult for the village banks to benefit from the initial establishment. Further analysis also found that the rate of return of village banks established for a long time was significantly higher than that of village banks with short establishment times.

Secondly, comparing the income levels of rural banks and listed commercial banks, it can be seen that except for the total return on assets ratio in 2013, the yield ratios of rural banks are much lower than commercial banks, reflecting the operation of rural banks. Environment and problems faced. However, the rate of increase in the yield of rural banks has been rapid, and the gap with listed banks has gradually narrowed.

3.2.2 Safety indicators

The data shows that the ratio of non-performing loans of the sample village and town banks is very low, and there were no non-performing loans in 2011 and 2012. In 2013, only two sample village and town banks incurred non-performing loans, and the average value was significantly lower than that of commercial banks. The main reason may be that rural banks have been established for a relatively short period of time, relatively few loans have been issued and non-performing loans have not yet been fully reflected. On the other hand, to a certain extent, it also shows that the village banks' own business is still relatively stable and adheres to the principle of prudent operation.

The capital adequacy ratio of rural banks is far higher than the 8% required by the Basel Accord, and it is significantly higher than the average level of listed banks. The capital adequacy is good. From this perspective, it has stronger risk resilience. Further analysis found that the capital adequacy ratio of rural banks showed a declining trend, which was mainly due to the continuous increase in loan issuance by village and town banks and the corresponding increase in risk assets. This was consistent with the observed increase in the ratio of bank loans to rural banks. It can be expected that with the ever-increasing profitability of rural

banks, the probability of insufficient capital adequacy ratio in the short term is relatively small.

3.2.3 Liquidity indicators

The average current ratio of rural banks in 2011-2013 was 92.95%, 87.54%, and 94.45%, respectively, with little change. Compared with listed banks, rural banks have a significantly higher liquidity ratio and have less short-term debt repayment pressure. However, to a certain extent, they also mean that the use of assets is insufficient and profitability is affected.

The average loan-to-deposit ratio of rural banks in 2011-2013 was 65.76%, 84.53%, and 70.06%, respectively. The fluctuations in the year were relatively large, and the difference in loan-to-deposit ratios among different rural banks was even more pronounced. Taking 2013 as an example, the minimum value of loan-to-deposit ratio is 25.74% and the maximum value is 163.24%. Among them, 3 loan-to-deposit ratios exceed 100%, and 5 loan-to-deposit ratios are lower than 60%, indicating that there are large differences in the development of rural banking services. The structure of loan-to-deposit ratios of some rural banks is irrational, and the balance between liquidity risk control and loan expansion should be emphasized. Out of support for "agriculture, rural areas and farmers", related policies have a looser requirement for the ratio of bank loans to rural banks, requiring that they gradually meet the standards within 5 years, and to a certain extent, the differences in the loan and credit structure of rural banks are relatively large. In the long run, a reasonable standard should be determined for the ratio of bank loans to rural banks to conduct more standardized and effective management.

3.2.4 Development ability indicators

From a comparative point of view, the growth rate of the loan and the profit growth rate of the village and town banks far exceed those of commercial banks. Judging from the trend of its own changes, the two indicators of the village and town banks have declined and stabilized. The higher loan growth rate and profit growth rate of rural banks indicate that rural banks are at a stage of rapid development of business. It also means that rural banks are at the initial stage of their establishment, and the baseline at the beginning of the comparison standard is relatively low, resulting in loan growth rate and profit. The growth rate is high. From practice, the latter explained stronger.

3.3 Construction of Comprehensive Performance Model for Rural Banks

When constructing the comprehensive performance evaluation model of village and town banks, we followed the principles of systematicness, science, comparability, feasibility, etc., and completed using mature factor analysis methods. According to the principle of evaluation system construction, four categories of indicators such as profitability, liquidity, safety, and development ability are selected as evaluation contents. Indicators for measuring profitability include return on equity X1, revenue on profit X2, and income to cost ratio X3. Indicators measuring liquidity include current ratio X4 and loan-to-deposit ratio X5. Indicators of safety include self-owned capital ratio X6 and capital. The adequacy ratio X7 and the total asset growth rate X8 are indicators of development.

1. Processing of indicator data

There are generally three types of index indicators in the index system: positive indicators, negative indicators, and interval indicators. In order to eliminate the influence of directional factors on research, indicators need to be processed in the same direction, and the three indicators are uniformly converted into positive indicators. That is, the larger the index, the better the business performance. In addition to the loan-to-deposit ratio, the eight indicators in the index system of this study are all positive indicators. Therefore, only the interval indicators can be converted into positive indicators.

The loan-to-deposit ratio should not be too large or too small, and the loan-to-deposit ratio is too low, which means that the bank's loans are relatively small relative to deposits, leading to low bank income, high costs, and poor profitability. On the contrary, if the loan-to-loan ratio is high, the bank's liquidity risk is high, and it even faces a run and payment crisis. China's regulations stipulate that the deposit and loan ratio of commercial banks should not exceed 75%. Therefore, the gap between the loan-to-deposit ratio and the reference standard of 75% can be used as a measure. The smaller the gap, the better the indicator, ie, $1 - |0.75 - X5|$.

First, using SPSS 20.0 software, the sample coefficient matrix, KMO test, and Bartlett's spherical test method were used to test whether the sample was suitable for factor analysis. The test results indicate that the study is suitable for meaningful factor analysis.

Secondly, factor analysis was conducted on the sample data. The results showed that the cumulative interpretation of the first four common factors on the sample

variance reached 81.15%, and the four common factors selected had a good explanatory power for the performance of the sample village and town banks. The degree of interpretation of factor 1 is the strongest, reaching 31.96%, and the explanatory degrees of factor 2, factor 3, and factor 4 are 19.12%, 15.51%, and 14.49%, respectively. As a result, the original 8 indicators reduced the dimension to 4 factors and already included most of the business performance information. The gravel plots of the factors also show that the eigenvalues of the first 4 factors are generally higher, connecting into a steep polyline, and the characteristic root behind the 4th factor is generally lower, and the connection becomes a gentle polyline, further indicating the extraction Four factors are more appropriate for research.

Again, the factor load matrix is rotated using the maximum variance orthogonal rotation method to obtain a rotated factor load matrix. After the rotation of the load factor has been markedly polarized. The first common factor Y1 has a larger load on indicators X1, X2, and X3. That is, factor Y1 has a greater influence on these three variables. According to the meaning of variables, factor Y1 can be defined as a profit factor. Y2 has a large load on X4 and X7, which can be defined as safety and fluidity factors. Similarly, Y3 is a liquidity factor and Y4 is a development factor.

Table 2: Factor score coefficient matrix

	1	2	3	4
X_1	0.345	0.089	0.193	-0.036
X_2	0.237	0.012	-0.074	0.202
X_3	0.358	0.108	-0.242	0.051
X_4	0.209	0.796	0.285	-0.197
X_5	-0.036	0.191	0.861	0.106
X_6	-0.362	-0.044	-0.065	0.308
X_7	-0.075	0.417	-0.116	0.285
X_8	0.121	-0.004	-0.080	-0.837

Table 2 gives the factor score coefficient matrix, from which the score expression for each factor can be found. On this basis, using the weighted contribution of each factor's contribution rate to the total variance contribution rate of the four individual factors as a weighted summarization, a comprehensive score for each

bank's performance can be obtained, and the comparative evaluation among overall performance of village and town banks can be carried out accordingly.

$$Y = (31.96Y_1 + 19.188Y_2 + 15.509Y_3 + 14.493Y_4) / 81.149 \quad (1)$$

This paper uses the above results to estimate the overall performance of the sample village and town banks for the three years from 2011 to 2013. The comparative results obtained are in good agreement with the observed rural bank operations, and the data also show that the performance scores of the village and town banks have continuously increased. The trend reflects the increasingly improving business conditions of the village and town banks.

4 Empirical Study on Factors Influencing Comprehensive Performance of Rural Banks

4.1 Model Construction

According to the operating characteristics of rural banks and taking into account the availability of data, this paper analyzes the factors affecting the overall performance of rural banks from the perspectives of agriculture-related conditions, asset size, capital structure, talent quality, and regional economic conditions.

Based on the value of the comprehensive performance scores of each village and town bank calculated by (1) above, the following model is constructed:

$$Y = a + \beta_1 NL + \beta_2 Z + \beta_3 DR + \beta_4 B + \beta_5 C + \beta_6 G + e_i \quad (2)$$

Among them, Y is the comprehensive performance score of the village and town bank; NL is the proportion of accumulative total loans of the farmers, Z is the total assets (taking the natural logarithm), DR is the asset-liability ratio, B is the proportion of bachelor degree or above, and C is the bank percentage of professional qualifications, G is the per capita GDP of the county (take the natural logarithm); a is a constant term, β_i is the regression coefficient of the explanatory variable, e_i is the residual item.

4.2 Variable Selection and Explanation

We have chosen to analyze the factors affecting the overall performance of rural banks in terms of their agro-business status, asset size, capital structure, talent quality, and regional economic conditions, based on the following considerations:

4.2.1 The status of agricultural operations

The rise and development of rural banks is the result of the dual role of market forces and policy thrusts. Of course, in terms of the current situation, the government's mandatory promotion features are even more pronounced. Due to the fact that the dual economic structure of our country has not yet completed its essential changes, there will be a certain contradiction between the profit-seeking nature of rural banks and their policy objectives. It is difficult to maximize profitability and support agriculture in supporting small-scale missions in the current rural market

environment. Organic compatibility. In other words, there may be a negative correlation between the overall performance of rural banks and their agricultural operations.

In the past, research literature often used “agricultural loan ratio” as a measure of rural financial institutions' agricultural operations. However, in actual surveys, we found that the ratio of rural-to-agricultural loans of most rural banks was at or close to 100%. The reason for this may be that rural banks do indeed implement the policy mission of taking root in rural areas and serving the three rural areas. On the other hand, it may be that the persuasiveness of the “Agriculture-to-Agriculture Ratio” indicator is debatable. In fact, the agriculture-related loans include not only the loans of rural households but also some small and micro-enterprise loans involving agriculture. There is a lack of scientific and rigorous measurement standards when defining loans for agriculture-related agriculture, especially for agriculture-related small and micro enterprises. In order to overcome the inadequacies of the indicator, we select the indicator of the cumulative share of loans to households (NL) as a measure of the status of agriculture-related conditions, which can overcome the ambiguity caused by the definition of loans for small and micro enterprises and more accurately reflect the support of rural banks. Agricultural conditions.

4.2.2 Asset size

The banking industry often has obvious scale effect. Commercial banks' operating performance and asset size generally show a positive correlation. The indicators for measuring the scale of bank operations include the number of employees, total assets, total liabilities, and the size of deposits and loans. Among these inspectable indicators, the amount of total assets (Z) is often more representative, and can better reflect the size of the bank's overall operations.

4.2.3 Capital structure

The capital structure refers to the proportional relationship between the owner's equity and the creditor's rights, which reflects the source composition of the company's fundraising funds. A proper capital structure can reduce the company's financing costs and improve operational performance. Compared with ordinary enterprises, as a bank operating a currency credit business, the debt ratio in the optimal capital structure is relatively high. The asset-liability ratio (DR) is the most

typical indicator for measuring the capital structure. According to traditional experience, the asset-liability ratio of the optimal capital structure of commercial banks is often around 90%, and the low debt-to-equity ratio will affect the profitability of banks and excessive assets. The debt ratio will cause banks to face higher business risks.

4.2.4 Talent quality

Finance is the core of the modern economy. The inherent requirements of the banking industry for the quality of talents are relatively high. Village and town banks are no exception. Establishing a reasonable and efficient human resources management mechanism and improving the quality of employees are important ways to improve the performance of rural banks. At present, there are generally not enough talents in the village and township banks, and the overall quality is not high. The level of academic qualifications of employees is obviously low, and their experience is relatively lacking. In view of this, the paper selects two indicators of the proportion of undergraduates or above (B), and the proportion of qualified personnel with banking qualification (C) to measure the quality of rural bank personnel.

4.2.5 Regional economic development

In addition to the internal influence factors, the external performance of the regional economic development will also have a direct impact on business performance. Per capita GDP in counties is a more appropriate measure of the level of regional economic development.

The descriptive statistics of the above indicators are shown in Table 3. It can be seen that the cumulative amount of loans to the farmer households in each year (NL) accounted for 30-60% of the total, and the gap between village banks in each year and year was large. Taking 2011 as an example, the maximum value is 94% and the minimum value is 7%. This shows that the level of financial services such as providing rural banks with loans for rural households varies greatly; the average asset size of rural banks has an upward trend, but banks The gap is more obvious; in the three years, the average debt-to-asset ratios are 57%, 68%, and 72%, respectively, and there is a gradual upward trend, but there is still much room for growth, especially for rural banks with lower asset-liability ratios; In terms of personnel quality, the proportion of personnel with bachelor degree or above is more than 50% in each year, and the average level of academic qualifications

is relatively high. However, there is a large gap between banks, with the highest ratio accounting for 91% and the lowest being 30%. The proportion of people with qualifications for banking is generally low, with an average value of around 20%. The gap between the per capita GDP levels of counties where rural banks are located is more obvious, reflecting the large differences in the degree of economic development between regions.

Table 3: Descriptive statistics of variables affecting operating performance

	2011				2012				2013			
	Avg.	SD	Min	Max	Avg.	SD	Min	Max	Avg.	SD	Min	Max
<i>NL</i> %	0.58	0.34	0.07	0.94	0.36	0.03	0.03	0.82	0.31	0.18	0.04	0.56
<i>Z</i> (100 m yuan)	2.67	2.47	0.99	7.54	4.00	3.40	2.31	14.2	7.08	9.08	0.82	37.7
DR%	0.57	0.29	0.14	0.86	0.68	0.11	0.46	0.86	0.72	0.21	0.27	0.92
B%	0.51	0.19	0.38	0.89	0.65	0.18	0.30	0.87	0.72	0.16	0.47	0.91
C%	0.18	0.06	0.12	0.29	0.20	0.04	0.12	0.27	0.21	0.07	0.09	0.32
G(yu an)	483 17	323 83	166 41	1098 48	629 00	396 19	172 87	1369 09	696 72	447 19	192 88	1590 90

4.3 Model Estimation and Result Analysis

Stata12.0 software was used to perform regression analysis on the sample data. The results are shown in Table 4. It can be seen that the sample determination coefficient R^2 is 0.6556, the correction R^2 is 0.5696, the model goodness of fit is good, and the F -test is very significant, which shows that the relevant explanatory variables have a good explanation of the dependent variable, and the regression equation is significant.

From the perspective of each explanatory variable, except that the logarithmic Z statistic of the total assets was not significant at the level of 10%, the rest passed the significance test. The reason why the total assets index is not significant may be due to the fact that rural banks are in the early stages of development and economies of scale have not yet emerged. At the same time, the rural banking

business is oriented toward “agriculture, rural areas and farmers”. Customer attributes and rural economic characteristics have led to the characteristics of economies of scale that are common in other areas, and may not be evident in rural financial institutions.

The proportion of accumulative occurrences of loans to rural households was significantly negatively correlated with the performance of rural banks, reflecting the poor overall performance of rural banks that focused on farmer loans, and the fact that rural banks with good operating performance (mainly for rural household loans) were not ideally, the behavior of supporting agriculture is in conflict with the performance of comprehensive operations. In the absence of appropriate policy support, the village and township banks will affect their own business performance if they wholeheartedly serve the farmers. How to effectively improve this situation deserves attention.

Table 4: Regression results of factors affecting overall performance

Variable	Coefficient	<i>t</i> value	<i>P</i> value
α	2.445045	2.01	0.056
<i>NL</i>	-.5116132	-3.64	0.002
<i>Z</i>	-.0757414	-1.23	0.231
<i>DR</i>	.7547246	3.04	0.006
<i>B</i>	.3638891	1.95	0.062
<i>C</i>	1.060366	1.82	0.081
<i>G</i>	-.0861783	-1.78	0.088
<hr/>			
R^2	0.6556		
AdR^2	0.5696		
<i>F</i> value	7.62		
<i>prob > F</i>	0.0001		

The asset-liability ratio is significantly positively correlated with business performance, which indicates that the higher the debt ratio of rural banks, the better their overall performance. According to traditional experience, the optimal asset-liability ratio of commercial banks is about 90%. Below this value, the increase in

asset-liability ratio can better serve as financial leverage and improve the overall performance of banks. This is in line with the status of rural banks. (Sample village and town banks' debt ratio is much lower than 90%).

The test results of the proportion of personnel with bachelor degree or above and the proportion of qualified personnel with banking qualifications show that the quality of talents is an important factor affecting the performance of rural banks. Effectively improving the quality of employees is of great significance for promoting the healthy development of rural banks.

It is worth noting that the GDP per capita in counties is negatively correlated with the comprehensive performance of rural banks, that is, the local economic development level is inversely related to the profitability of rural banks. In areas where the level of county economic development is relatively low (high), the comprehensive management performance of rural banks is relatively good (poor). The reason may be that there are many financial institutions in regions with high levels of economic development, and the competition among commercial banks is fierce. VTBs start late, are small in scale, and have weak competitive strength, which results in relatively poor overall performance. This result is consistent with the research findings of Dong Xiaolin et al. (2014). Their research also shows that the establishment of an address has a significant impact on the operating performance of rural banks. The operating performance of rural banks in economically developed regions is significantly lower than that in economically underdeveloped regions. From another perspective, this also reflects that rural banks and other commercial banks should start misplaced competition in areas such as operating areas. The financial supply in underdeveloped areas is insufficient, and rural banks have more room for development.

5 Countermeasures and Suggestions for Promoting the Healthy Development of Rural Banks

5.1 New-type rural financial institutions

New-type rural financial institutions have been congenitally given responsibility for resolving the contradiction between supply and demand in rural financial markets. Village and town banks should match their own market positioning with the development of rural economy, and follow the concept of inclusiveness on the basis of striving for sustainable commercial development and benefits for farmers culture, and this idea is internalized in the spirit of enterprise, highlight its own operating characteristics, and strive to achieve the mutual benefits of rural banks and farmers, coexist with agriculture, and the rural win-win situation. The empirical results of the negative correlation between the level of county economic development and the overall performance of rural banks indicate that the financial products that are rooted in relatively backward rural areas and provide local market demand are conducive to exerting the unique market competitive advantages of rural banks and enhancing the integration of rural banks. With performance and sustainable development capabilities, the village and town banks may be able to explore a business model in which the support of poverty alleviation and economic benefits coexist.

5.2 Use of economies of scale

According to the theory of enterprise organization in the New Institutional Economics, economies of scale are a distinctive feature of an enterprise, especially a financial enterprise. However, the special properties of the rural economy objectively require flexible and diverse small financial organizations to provide characteristic services. To this end, VTBs can innovatively implement organizational innovations based on the rationality of the institutional boundaries. The idea of financial industry clusters should not be limited to geographical concentration and concentration, but also reflect the concentration and integration of management and business ideas, the sharing of service platforms, and the "learning effect" of individuals within the cluster. Therefore, the rural bank holding group or the joint organization's innovative model and mechanism of action have a solid theoretical basis. Based on this model, we will implement product innovations based on the characteristics of local rural financial markets, provide featured services, effectively conduct dislocation competition among peers, and commit to personalized and differentiated development. This is the basis for VTB to enhance its competitiveness and maintain sustainable development strategy.

5.3 Innovation of green human resources management in rural banks

In order to effectively alleviate the shortage of professionals and the lack of attractiveness, the innovation of green human resources management in rural banks is imperative. Green human resource management emphasizes the overall growth of employees, coordinated development, initiative, and organizational inclusiveness. Its purpose is to achieve a relative balance and normal ordering of the relationship between the various dimensions of the organizational niche and the external environment, and to promote the organization's continuous development. Village and town banks should combine the rural economic and social environment and the trend of financial reforms, establish and develop new values and talents through advocating and implementing green human resources management strategies, and develop coordinated development in talent introduction, comprehensive quality training, and people-organization relations. Effectiveness mechanism, emphasizing employee's subjective status and innovation ability in enterprise development, earnestly respecting employees' dignity, rights, values, and desires, enhancing employees' sense of belonging, honor, achievement, and well-being, and fundamentally improving the bank's Intrinsic motivation for sustainable development.

5.4 Further optimize the ownership structure and capital structure, and effectively improve the governance efficiency and business performance of rural banks

Further optimize the ownership structure and capital structure, and effectively improve the governance efficiency and business performance of rural banks. First, rural banks should reduce the proportion of shares held by the main initiating bank to attract local enterprises and rural households to invest in shares. This will not only stimulate the participation of county-level private capital in the management of banks, but also make full use of local shareholders' resources to shape and continuously optimize the development process. Natural incentive mechanism. In this process, the competent authorities should reform the existing access policy for setting up village banks, gradually liberalize the ownership ratio of the main initiating bank and the requirement for private capital participation, and encourage the participation of rural private capital in the rural banks under the premise of continuous improvement of the regulatory system. Effectively circumventing the corporate governance malpractice of "one dominance" and improving the governance efficiency and sustainable development capacity of rural banks. Second, the rural banks will appropriately increase the asset-liability ratio and make full use of the role of financial benchmarks to enhance business performance.

The survey found that the current level of debt of village and town banks is relatively low and there is still more room for improvement.

5.5 Combining its own characteristics and the endowment structure and risk characteristics of rural market factors

Combining its own characteristics and the endowment structure and risk characteristics of rural market factors, it builds a systematic risk monitoring and control system. Village and town banks must learn from the operational experience of advanced small financial institutions both at home and abroad, and reduce credit risk by establishing effective internal controls, improving borrowers' endogenous incentives, restricting supervision mechanisms, and innovating trading techniques.

5.6 Establish and continuously improve the comprehensive evaluation system of social performance of village banks

Establish and continuously improve the comprehensive evaluation system of social performance of village banks to help the healthy development of rural banks. The empirical results of the negative correlation between rural households' loan behaviors and business performance provide empirical evidence for appropriate support policies. The government should endeavor to create an external environment conducive to the formation of cooperative games and fair competition (such as establishing a sound system of rural credit information and agricultural insurance systems, etc.), form a coordination mechanism to resolve various conflicts, and focus on building a standardized and efficient rural financial system. The coordinated development of all types of financial institutions should be planned from an overall perspective to form an effective and equitable social performance evaluation system for rural banks to objectively evaluate their overall contribution to the promotion of rural economic development and promotion of social benefits, so that rural banks can be integrated. Values, rather than mere economic values, are benchmarking and guiding their own behavior. For small financial institutions that are facing the rural financial market and are in the early stages of development, the government should clarify the reasonable and effective supportive policies and corresponding compensation mechanisms, and set up a special coordination agency to put them in place, so that the pursuit of the value of new-type financial organizations and government policies target effective coupling and docking. At the same time, according to the characteristics of the new type of rural financial institutions, the supervision department should adopt targeted and

differentiated supervision ideas, formulate and implement a multi-layered classification supervision system, and realize the organic integration of the dual goals of market activation and risk control.

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Part 1 Framework conditions and macro-economic analysis

A 组织的意识形态——组织间知识转移中社会文化边界的实证分析

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摘要：

大多数情况下，各大公司在推进创新发展的过程中，跨组织边界的知识转移扮演着至关重要的角色。然而，这种转移无法轻易实现，而是必须在克服不同组织文化和意识形态的基础上才能达成。在此背景下，本文探讨了如何实现组织间知识转移以及在转移过程中可能出现的困难，同时在社会建构主义知识观和新制度组织理论的基础上重点研究了组织间知识转移的社会文化维度。在一个多案例的探索性研究中，我们研究了企业风险资本交易中的知识转移。组织生活世界的不同会导致感知和理解上的问题，这些问题的模式无法进行比较。

关键词：

组织间知识转移，案例研究，企业风险投资，生活世界，新制度主义

1 引言

多萝西·伦纳德（1995）曾表示，大多数创新发生在学科或专业交叉处。这一观点告诉我们跨学科研究是体现竞争优势关键因素之一，但同样也是创新和维持不断创新势头的困难所在。越来越多有关组织间知识的研究都着重强调上述现状所带来的挑战，首先认识到专业领域间“知识边界”（布朗和杜古，1998）的存在，其次认识到知识“既是创新的源泉，又是阻碍创新的壁垒”（卡莱尔，2002，442）。

本文将在社会建构主义的理论基础上研究组织理论中的边界问题。我们将探究知识如何跨越边界转移，以及新知识如何在需要创新的环境中产生。在这种情况下，创新无论在内部或外部都可产生。这两种方式意味着跨越现有边界，这些边界可以是组织内的（内部）和组织间的（外部）。由于组织通常不具备创新所必要的知识，同时受到能力限制，只能通过内部研发投入产生新知识（瓦德瓦和科塔，2006）。因此，为了积累必要的知识，许多组织转向外部活动，如通过联盟、建立合资企业、兼并和收购企业以及企业风险投资的手段（希尔德、毛拉和凯尔，2005），跨组织边界在这期间时有发生。本研究考察了企业风险投资（CVC）三联体中的知识转移。企业风险投资是一种创新管理模式，企业风险投资三联体由现任在职者的企业风险投资单元组成，这些投资涉及在职者的业务单元以及投资的新项目。在本研究中，我们至少处理两个组织文化/意识形态，首选各种亚文化和职业共同体，并划分几个组织内和组织间的界限。因此，在不考虑具体研究对象的前提下，我们要研究的问题是：

（1）在一个拥有不同意识形态的跨组织体制下，知识和资源是如何在不同的组织间和组织内交换的？

（2）在此期间，什么样的困难可能凸现出来？

研究方向如下：我们将新制度主义组织理论与知识社会学联系起来，在此背景下，研究重点一方面放在社会建构主义知识观，另一方面强调组织间知识转移的社会文化维度。

2 前期研究和理论基础

在涉及知识共享网络和组织间网络学习的出现和运作的相关研究中，戴尔和乃乃香（2000）认为：“迄今为止很少有实证研究”，“要想取得进一步的发展，就要十分依赖对实施过程的密切观察，也正是在此过程中隐性知识才得以传播”（p.346）。与组织间知识转移和生成的实证研究类似，针对这一问题的理论分析还尚处于起步阶段。当然，我们已经发现许多该研究领域的出版物，如戴尔和辛格的《关系视图》（1998），卢巴金等人就互惠企业间的学习概念（2001）的研究，拉尔森等人（1998）就组织间学习困境所做研究等。然而，关于知识转移的社会文化维度和由此产生分歧的意识形态和障碍的问题在某种程度上没有受到人们足够的重视。舒尔策和斯蒂贝尔（2004）将这些方法与“新功能主义话语”而不是“建构主义话语”联系起来，后者中的知识是通过社会互动过程构建的。因此，要理解和构架知识，就必须从具体的社会实践中去看待知识。目前，大量研究表明，在组织内部层面（沙因，1996）、职业共同体（贝姬，2003）或实践社区（盖拉尔迪和尼科利尼，2002）内的不同亚文化塑造了社会文化界限，从而阻碍了知识的转移（贝姬，2003）。然而，尽管在组织间知识转移的过程中，基于社会文化障碍/条件下的社会建构主义话语似乎是站得住脚的，不过考虑到我们面临各种各样的“生活（Lebenswelten）”（许茨，1971），就这个话题的经验讨论仍显得相当匮乏。因此，我们的研究目的是在某种程度上填补社会建构主义和新制度主义理论上的空白。

理论基础——知识与制度

知识总是来源于与其他参与者的社会互动，反映了（内在）经验的主观现实（伯杰和卢克曼，1977）。因此，知识的创造只能被理解为一种非常具体的情境活动，它根据特定的意义分配规则和意义构成运行。构成其自身的社区会根据他们的认知规则系统来感知他们的环境。因此，社会建构的知识将再次影响到参与这个过程的人员，因为它在日常生活（Alltagswelt）中对各种行为进行调整（伯杰和卢克曼 1977, 21）。这种行为调节知识将会以日常生活中的分类、例程、角色和制度的形式出现。因此，一个合理而有意义的构思已经在某个组织中发展起来，随之而来的是应该运用何种相关知识，这些知识将以何种逻辑为根据进行转移，以及应该何种工具、程序或惯例来进行操作才是正确的。在大的社会背景下，这个观点将会被严格定位于占主导的制度（如行业、职业、组织单位）。另一方面，研究者认为“组织结构和实践本身并没有制度意义”（齐伯，2002，236；弗里德兰和阿尔福德，1991）。在互动的过程中，研究人员会将制度意义归因于组织结构和惯例。

组织实践分析较少涉及参与者所代表的具体知识内容。相反，它更多的是与意义的制度化模式相契合，这种制度化模式强调知识本身，并构成之后可能成为知识内容的基础。在许茨（1971）的术语解释中，生活世界（Lebenswelt）被理解为没有反映在日常生活中的意义。生活世界建立了一种社会文化的边界，他们之间的相互作用以一种合理的方式相互对应。因此，生活世界（Lebensweltliche）取向容易受到意识形态的影响，这是通过限制性自我和外部施加的反射来稳定给定的社会和政治秩序（伯杰和卢克曼，1977）。这些边界是特定于系统的，并且随着系统化程度的增加而变得十分明显，从而使得组织之间的线性知识转移无法进行。“拥有不同知识和知识体系的思想世界无法轻易的进行思想交流，若对方问题本身无实际意义，对方的探讨问题的核心有可能被看做是一个相当深奥的问题”（博兰和通卡西 1995, 351）。

3 研究方法和数据集

这一探索性研究的研究对象是企业风险投资—公司—投资组合公司（PC）三联体。我们采用定性研究方法，并以此为基础，对定性数据的解释性分析进行研究。我们的研究是基于（1）先前良好的理论知识和（2）专业细致的观察上的。本研究涉及一个多案例设计，通过复制法则选择待分析的案例。

正如在定性研究中那样，我们使用了“基于理论的”采样和重叠的数据收集和分析（格拉泽和斯特劳斯，1979）。从2002年开始，七个德国企业风险投资活动的探索性案例研究都是在分析了大量文献，特别是32个叙事性、颇具指导意义的采访后进行的。第一个步骤中，对七个案例逐一进行分析，之后再一起进行比较案例分析，并最终归类。包括CEO、商业单位和公司创始人的额外视角在内的采访数据都被“三角化”。我们使用专家定性定量分析软件对来自三联体的数据进行分析，使我们能够对数据进行筛选、编辑和分类，以探索在组织间关系中以及知识转移和生成过程中各方的不同意识形态和权力集合

我们用比较分析来编码访谈记录，给其中每个事件都分配一个紧急的、开放的编码方案（斯特劳斯和柯宾，1990）。在此过程中一共产生了39个代码，随后通过轴向编码将这些代码缩减成为更抽象或通用的类别。这一阶段的分析产生了14个类别。在选择性编码的过程中，我们进一步瓦解和评价所得分类，最终得出三个主要类别：（1）组织生活世界（Lebenswelten）（2）交互感知（3）知识转移和生成。在这项研究中使用了连续比较方法，其中涉及对数据内部有效性的检查的操作（柯克和米勒，1986）。

4 结果

在这一部分，我们不会特别关注组织特征。相反，我们主要关注文化象征性产生的原因，以解释和理解行为、成员考虑的行为乃至结构和过程的对峙。我们主要揭示了（1）投资组合公司和工业公司的生活世界和意识形态。在此我们具体描述了企业的自我认知以及他们对责任和知识的理解。然后我们指出（2）参与者对对手的交互感知和来自于对手的交互理解。最后，我们描述了（3）参与者之间的知识转移和生成。

4.1 组织生活世界/社会环境

投资组合公司

我们的研究领域的从业人员绝大多数都有科学研究背景，这也意味着他们的工作态度和观点对他们的解决问题时的主导逻辑有着巨大影响。根据科学社会化，组织成员认为这些互动形式非常适合反映开放性的、强烈的合作意愿、互惠规范和非正式交流。内部知识交流主要是在讨论和工作中发展起来的，其中开放思想和观念正在不断循环。因此，知识似乎是一种准公共物品，所有组织成员都能够获取并作出贡献。个人交换知识的动机不是出于自身利益，而是出于对社会的关注。这是因为 0 道德上的相互承诺胜过潜在的个人利益。因此，合作是知识管理的基本理念，也是建立的标准规范。这种家庭的社会结构是通过相互信任、尊重和同感共鸣来支持和控制的；威尔金斯和欧基（1983）称之为氏族文化的社会整合。借助一个共同的专业社会化产生一个同质的价值和目标体系，允许初创企业成为社会文化高度整合的组织。深远的决策不一定遵循理性的标准，但正如在制度家庭中常见的那样，情感决定了决策。在一个时间和情感高度密集的工作环境中，具有科学技术背景的成员有内在的动力从而能够专注于解决创新的相关问题。客户、营销策略甚至是组织的专业公众形象最终被认为与实际任务无太多关联。相应的，新创企业的创建者对承担管理职能的兴趣不大。此外，大多数成员缺乏综合的管理知识和能力。

这种对创新和技术发展的单向关注程度经常受到环境的影响而加深。特别是在新经济的巅峰时期，“当新经济被认为是未来的话题”（投资组合公司）时，来自政治、媒体和各大公司的机构投资者纷纷表示支持创新的理念，同时将德国作为推进创新的摇篮，以期能将不断创新的良好氛围保持下去。在某种程度上，媒体极大地推动了技术创新的步伐，企业得到额外的的财政拨款，创始人逐步成长为

为技术和创业先锋。当时，新创企业及其创始人不单单要负责产品的销售和提供服务，还要作为行业的领军人物，传播的组织和创新的“新”思想，在新千年来临之际进一步推动经济和社会的不断发展。“新经济是关于划界的。我们是焕然一新、与众不同的，我们目前很好，而且会变得更好。一切古旧的东西都是次品”（企业风险投资）。

工业企业

与这种新的组织思想相对应的便是传统的企业结构和文化。企业文化主要是由形式化的大型机构构成，如马克斯·韦伯所说的官僚制的“铁笼”。根据他们的官僚职能逻辑，企业急需一个全面的规划和具体的组织结构，以便产生和实施那些“了不起”的想法。这种“创新官僚制”一方面留有创造的空间，另一方面可以实现纪律上作风良好、时间上严格控制、资源上充分利用和产品质量上得到保证（通常是合同保证）。这些合同根据各自分配的任务和环境进行形式化，细化可测量的目标并进行持续监控。因此，要想在一个大型的正规化组织中进行复杂的创新，就必须具备所需的资源和专业知识，并积极参与多人活动，如有必要，必须与时间和所创新内容协调一致，并得到全方位的支持，有良好的引导和监督。

正是利用执行文化的相关知识（沙因，1996），工作例程、功能逻辑和决策过程才能使跨国公司的成员能够将他们的能力和专业知识整合到组织情境中。在“创新官僚”中，掌握基于实践经验的知识在处理形式化的规则和程序中显得尤为重要。这些形式化的程序，包括合同、奖金、建议方案、数据库和激励机制，它们共同形成了组织内知识转移和生成的制度环境。

我们在数据集的分析过程中发现，通常所指的知识社区或“职业共同体”（贝姬，2003）会作为这些互动过程的社会参考点。它们尚处于商业单元级的层面和形式上，相对于环境和技术输入，本地知识库的局部特征明显阻碍了所出现知识的文档以及后来的传输。这种“职业共同体”的自我形象和社会认同主要表现为以特定工作程序形式的组织前期社会化，并由职业驱动，从而产生具体的绩效标准和职业道德（沙因，1985）。因此，社区特定的规则系统和关联结构（许茨，1971）将很难在组织层面上进行修改，有时与“创新官僚制”的制度预设背道而驰。为了实现有效的合作，使企业风险投资单元能够访问社会性业务单元则显得尤为重要。与生活世界（Lebenswelt）有关的社会文化联系对于为投资组合公司融资以及实现协同效应来说至关重要。因此，知识生成和转移的成功需要考虑到方方面面，要处理所有相关的职业共同体，又不能忽视机构形式化知识管理的先验。

4.2 投资组合公司与工业企业的互动感知

投资组合公司对工业企业的认知

由于有着完全不同的组织思想，投资组合公司将自己和他们的对手彻底划清了界限。他们认为对手的理性决策和程序是“透明的，有时甚至超出他们的理解”

（投资组合公司）。管理文化的可见结果，如层级整合、控制机制的支配性和契约相关的互动模式，证实了初创企业会使工业企业形式化、官僚化。由于相当数量的资源被用于风险规避（为了加强组织内的政治过程），面向家族的投资组合公司通常认为大型公司过分偏执。年轻的企业家们认为制度化的管理程序被过度官僚化，且造成资源浪费，在他们看来，组织结构和专业化完全没有必要。更为突出的是，那些认为自己是技术先驱的公司出于财务和信誉的考虑，将主要建立一个跨组织的关系以及受益于生产能力的（大）公司。在他们看来，只有足够的基础设施才能使创新技术获得成功。他们进一步辩称，如果企业风险投资的管理人员不理解技术或商业模式，并且由于他们在相关领域知识的空白使其在面对投资组合公司时提出不合理的要求，这样只会导致更多问题的出现。此外，继他们的论点提出之后，对形式化控制技术提出的各种要求——如各种里程碑事件的达成、控制仪器、报告机制的实施——都将会危及创业精神，甚至被认为是企业的独立性的非法攻击。

工业企业对投资组合公司的认知

由于执行文化的社会化（沙因，1996），工业公司将投资组合公司高层管理人员的能力和专业化视为成功的关键。他们只对创新技术感兴趣，因为这些技术可以转化为可扩展的商业模式。然而，从企业风险投资单位的角度来看，这只是投资组合公司组织和管理逻辑改变的结果。具有相对家族化社会结构的初创企业或研究实验室必须由专业化的公司代替，以适应市场的制度要求，包括采用当前的控制技术，实施可量化的通信形式，以及外部的、专业化的管理。不可否认的是，这种制度的重新定位急需组合公司逻辑的变化，同时构成协议的基础。只有当其中的主角改变感知方式，而不是一种以市场为中心的方式来对待自身和他们的环境时，一个变革和学习的制度过程才能展开。不幸的是，正如企业风险投资所指出的那样，创始人的认知灵活性是否能够达到要求尚且存疑。主要是因为他们会从实验室负责人而非 CEO 的角度进行自我认知，其次还有他们会对自己行为进行不断调整，以期达到相应机构的期望。有趣的是，虽然许多人认为新企业的工作和行为方式十分不专业，且与市场脱节，但制造方的代表仍然受到投资组合公司强劲创新动力的冲击。新创企业甚至被视为是对公司自身立场的巨大威胁，也因此必须采取各种手段与之抗争。

不可比较感知模式的影响

现存互惠的自我感知和参与者的外部面貌上的差异（*Fremdwahrnehmung*）往往会给跨组织的交集过程带来致命的影响。由于制度化生活世界

（*Lebenswelten*）的不同，那种只有当参与人员在了解对手兴趣爱好、感受和期望的基础上才能在彼此之间产生的共鸣是不太可能发生的。相反，彼此之间“出于理智的放弃”在沟通的过程中占据主导地位，这也使得组织间知识的生成或转移无法发生，也不可能发生。正如许茨(1971)的“观点的对等”所描述的那样，一个人可以观察到相互之间虚构的感知。由于参与者根本不知道对手的语言习惯、暗指含义、动机和兴趣所在，参与者只能参照已经存在的制度化的行为角色，这些行为对于各自的行业来说很有代表性，并希望能够实现互惠互利的目标。在给定角色之后，行业经理和企业家长们认为他们的最终目的是追求个人利益的最大化（韦伯和戈贝尔，2006）。

由于双方对彼此知之甚少，他们在相处过程中很可能有所保留，对对方缺乏信任，并会认为组织间联系带来的机会固然有价值，但相处的风险比之更高。在最坏的情况下，相互误解和由此产生的不信任会占据主导地位，进而导致关系恶化，资源流动减少，投资组合公司面临破产的风险。许茨（1971）指出，互惠分类的致命自我动力将在此时凸显出来。然而，由于制度边界采取了虚构的互惠观点，使得公司创始人和行业经理之间的基本沟通能力得以发展。从组织间的角度来看，这种对制度化角色的永久重新定位造成了意识形态预先形成感知方案的出现和再生。结果是这种自我参照的过程不仅验证了目前一些负面偏见的真实存在，还导致在交流过程中自以为理解对方的意图，然而确无法做出正确的行动而造成不可挽回的后果，也因此无法获取对方真正想要传达的信息。

5 讨论及结论

本文的目的是阐述跨组织知识和资源转移与不同的意识形态成果是如何超越组织内和组织间的界限转移的，以及在此过程中哪些困难会凸显出来。

因此，我们的关注点主要在建构主义话语（舒尔策和斯蒂贝尔，2004, 555）上，在没有实际观察者参与的情况下，知识不会被用来描述一个实体，而是会被用来单独构成并实现交互（即相互依赖的奉献和验证过程）中的持久性。“知识是不断地被社区中个人的社会实践所塑造的，反之亦然。因此，知识既是情境行为的结果，也是输入的结果”（第 558 页）。社会建构主义的知识转移方法在学术文献中普遍存在，但至今仍缺乏社会理论的支持（博兰和滕卡西，1995；布朗和杜古德，1991, 1998, 2001）。虽然我们将社会建构主义知识社会学与新制度主义组织理论相结合，但我们可以从实证的角度说明社会文化语境和意义形成的关联性，同时强调社会维度对于知识产生和发展的重要性。

我们已经证明在考虑社会文化机构的前提下，依然可以产生各种意识形态，这些意识形态会在处理什么是知识和如何处理这些知识时对其他参与者的看法产生决定性地影响。这些意识形态差异不仅会导致相互相互之间认识和理解上的障碍，而且会导致微妙的利益冲突甚至是正面的权力斗争。因此，不仅需要对新知识进行合理正确的阐述，而且在牵扯政治因素时，必须将其转化、塑造成即使在复杂的谈判过程中也能被大众所接受的模样。

最后，我们的最新研究成果为经验支持制度主义理论做出了不可磨灭的贡献，特别是斯基的纳维亚制度主义的“翻译概念”（查尔尼亚夫斯卡和约尔格斯，1996），试图利用此概念系统地捕捉知识集成发成变革的瞬间。

本文的关注点主要集中在创新和意义架构的再叙述上。斯基的纳维亚制度主义指出，在转译的过程中，不仅转译的思想是趋向于不断变化的，各自的意义参与系统也同样如此（查尔尼亚夫斯卡和约尔格斯，1996）。在我们所举例子中，它是由企业风险投资单元、投资组合公司和业务单元组成的三联体。一个侧重于修改这些参与系统的详细实证分析仍十分必要，也值得对其进行更深入的研究。

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Part 1 Framework conditions and macro-economic analysis

B 冯林, 李维邦: 政府干预、空间溢出与县域金融发展 - 于全国 1895 个县和空间杜宾模型的实证

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摘要:

本文采用全国 1895 个县（市）2002-2014 年的面板数据，通过构建静态和动态空间面板杜宾模型，从空间关联视角实证检验了县域金融发展的空间关联效应，以及政府干预对县域金融发展在县域内和县域间的空间溢出效应。研究发现：县域金融发展存在空间关联效应，地理上相邻或相近的县域具有相似的金融发展水平，县域金融发展水平的提高对周边县域金融发展水平具有促进作用。空间关联视角下政府干预对县域金融发展存在空间溢出效应，其中政府干预对本县域金融发展存在正向空间溢出，而财政分权条件下政府之间的竞争使政府干预对其他县域金融发展产生了负向空间溢出。本文研究结论可以为全面评判地方政府金融政策效果，提高地方政府金融政策协调性，推进区域金融发展实现良性互动提供有益的参考。

关键词:政府干预 空间溢出 县域金融 空间杜宾模型

1 一、引言

中国经济转型过程中政府干预是区域金融发展的重要推动力量。一方面，政府发挥着弥补市场不足和增进市场功能的作用；[1]另一方面，由于地区经济增长需要来自金融体系的支持，财政分权背景下，地方政府之间为增长所展开的竞争使其产生直接或间接干预区域内金融机构资金运用的动机，地方金融发展呈现出地方政府行政干预势力与市场化进程两股力量相互作用、相互影响的典型特征。[2]为助推县域经济发展，我国县级地方政府全方位、多渠道展开了对地方金融市场和金融资源流动的干预，如推动农村土地和林地承包经营权确权发证等产权制度的完善；加强信用体系建设，建立信用管理系统，打击恶意逃废银行债务行为，出资设立政府背景的“担保公司”、“担保基金”以及“助保金”以提高政府增信水平；引进股份制银行和城市商业银行、推进本地城市商业银行和农村商业银行改制、新增设立村镇银行和小额贷款公司等地方金融机构和地方金融组织；引导金融机构创新服务模式、提高服务水平等等，由于上述政策致力于市场体系的完善，可以称之为“进取型政策”。同时，国内县级地方政府还普遍出台《金融机构考核奖励办法》、《企业上市融资考核奖励办法》等政策文件，对金融机构在本地设立分支机构、增加信贷投放、呆坏账核销以及企业上市融资等行为进行考核，根据考核结果向金融机构和上市企业提供财政存款存放、税收减免、费用补贴以及向金融机构高管人员提供个税减免（返还）、高级人才补贴、现金奖励等支持，以提高金融机构信贷投放和企业利用资本市场融资的积极性。由于此类政策主要致力于避免本地金融资源的外流并吸引外地金融资源的流入，故可称之为“保护型政策”。

关于政府干预对金融发展的作用，现有研究主要基于空间独立视角展开并形成两种主要观点：第一种观点认为政府干预有助于提高金融发展水平。因为发展中国家制度不完善，需要通过政府的干预减少信息不对称，弥补市场失灵。[3]如谷慎等发现，地方政府会利用各种优惠政策积极引进金融机构并积极创造条件争取增设地方金融机构以动员更多资金支持地方经济。[4]徐建波等认为，政府干预政策作为金融机构的外部制度环境，可以通过“预期效应”和“成本效应”影响贷款的收益和成本，从而对金融机构的效益产生重要影响，政府干预能够有效改变金融机构风险预期和运营成本、缓解金融歧视，使更多的经济体获得金融支持[5]。第二种观点认为政府干预不利于金融发展水平提高，因为发展中国家的政府对金融体系和金融活动的过多干预抑制了金融体系的正常发展。如崔光庆等指出在政府干预影响下我国区域金融发展存在明显的“量性扩张”而“质性发展不足”状况。[6]姚耀军和尹希果等指出地方政府在沉重的财政负担下加强对金融信贷行为的干预，必然导致金融信贷资金配置的低效率。[7]-[8]皮天雷等认为地方政府的

干预对地区金融发展带来负效应，对法治促进金融发展的作用产生“挤出效应”和“替代效应”。[9]上述研究结合我国金融改革实践阐释了政府干预对金融发展的双重作用，但共同的局限在于将区域视为独立的个体去观察政府干预对金融发展的影响，忽视了空间关联视角下政府干预的空间溢出效应。

空间关联视角下，政府干预存在空间溢出效应，其不仅对本地区金融发展产生影响，也会对其他地区金融发展产生影响。“进取型政策”不仅有助于提高县域金融发展水平，而且县域之间政策的学习与合作能够提高双方金融发展水平，故此政策对其他地区的金融发展具有正向空间溢出作用。“保护型政策”虽然也能够提高本县域金融发展水平，但是此类政策并非着眼于金融市场的完善和地方政府之间的协作，而是致力于对现有金融资源的争夺，甚至引发地方政府之间围绕金融资源展开“逐底竞争”（Race to the Bottom），所以此类政策对其他地区的金融发展具有负向的空间溢出作用。显然，在考察政府干预对金融发展的影响时，不仅需要考虑其对本县域的影响，亦不可忽视其可能存在的空间溢出效应。而且政府竞争因素的存在还可能会使政府干预对本县域和其他县域金融发展的影响呈现截然相反的溢出效果。那么政府干预对县域金融发展存在何种影响？其对本县域和其他县域金融发展的影响是否存在以及存在何种差异？为此，本文基于空间关联视角，利用全国 1895 个县（市）2002-2014 年的面板数据构建静态和动态空间面板杜宾模型，实证检验县域金融发展的空间关联效应，借助政府干预的空间溢出效应揭示政府干预对金融发展在县域内和县域间的不同影响效果，并在此基础上提出优化地方政府金融政策，提高区域金融发展协调性的对策建议。

2 二、理论分析与研究假说

空间关联是指不同位置的观测值在空间上非独立，从而呈现出某种非随机的空间模式，即观测值及区位之间的一致性。目前区域间的经济联系也已经被大量文献所证实。[10]-[11]本文认为，县域金融发展也存在空间关联效应，其关联效应的形成至少存在两种渠道：一是经济关联，某个县域经济发展水平的提高会通过要素流动、知识和技术的溢出等多种途径带动其他县域经济的发展，进而带动其他县域金融发展水平的提高；二是合作与竞争，即县域之间围绕地方金融市场建设、产权制度完善或信用环境优化展开合作，或者相互学习对方的成功经验，抑或是围绕金融资源展开竞争，均会提高县域金融发展水平的空间相关性。此外，上述关联路径又与县域之间的空间关系密切相关，地理上相邻或者相近的县域资源禀赋更加相似、要素流动更加便利、政府之间联系更加密切、信息传递更加通畅，其金融发展水平的相关性因此也更强。基于以上分析，本文将首先验证如下假说：

H1：地理上相邻或相近的县域其金融发展水平存在空间关联效应。

财政分权理论认为，财政收支等政府行为存在外溢效应。某个地方财政支出的扩张会引致其他地区支出的跟进，即“示范效应”；地方财政支出所形成的公共物品和服务会使其他地区获益，即“联系效应”。地方政府之间的合作和适度竞争会带来政府行为的正向空间溢出，但是如果地方政府之间出现过度竞争，则会带来政府行为的负向空间溢出。改革开放以来我国实行的财政分权使地方政府成为了以经济利益最大化为目标的拥有独立经济利益的政治组织，引发了地方政府间的“横向竞争”，[12]-[13]而以经济增长为目标的干部考核机制使地方政府及其官员同时面临经济发展和政治晋升的双重压力。[14]竞争压力迫使地方政府设法在市场上吸引流动要素尤其是金融资源的流入以促进当地的经济增长。[15]

竞争压力下，地方政府出台干预政策首先会考虑本地区金融发展水平的提高。但有关政府竞争的研究成果表明，地方政府的竞争往往导致不利于地区协调发展的博弈结果，如谢炜等考察了我国公共政策执行过程中的地方政府间利益博弈，认为地方政府间为追求地区利益最大化的竞争导致了“公地悲剧”。[16]在围绕金融资源的竞争中，地方政府及其主要官员由于面临经济发展和实现政治晋升的压力，其更加追求短期政策效果的最大化，为实现本地区金融发展水平的快速提升，会倾向于采用“保护型政策”，从而形成对其他地区的负向空间溢出。据此，本文提出如下两个假说：

H2：政府干预对县域金融发展的影响存在空间溢出效应，其中对本县域金融发展存在正向空间溢出。

H3: 政府干预对县域金融发展的影响存在空间溢出效应，其中对其他县域金融发展存在负向空间溢出。

3 三、研究设计

3.1 (一) 空间相关性检验

在建立空间计量分析模型之前，首先需要确定被解释变量即县域金融发展水平是否存在空间相关性，如果县域金融发展水平存在空间相关性，则需要引入相应的空间计量模型进行分析。空间相关性检验主要借助空间自相关指数 Moran's I 完成，该统计量计算公式如下：

$$Moran's I = \frac{\sum_{i=1}^n \sum_{j=1}^n W_{ij} (Y_i - \bar{Y})(Y_j - \bar{Y})}{S^2 \sum_{i=1}^n \sum_{j=1}^n W_{ij}} \quad (1)$$

$$S^2 = \frac{1}{n} \sum_{j=1}^n (Y_i - \bar{Y})^2, \quad \bar{Y} = \frac{1}{n} \sum_{j=1}^n Y_i, \quad Y_i \text{ 表示第 } i \text{ 个县域的金融发展水平} \cdot W_{ij} \text{ 是 } n \times n$$

阶空间权重矩阵，反映了不同县域在空间上的关系， n 为县域样本总数。Moran's I 指数绝对值越大表明县域金融发展水平的空间相关性越强，反之则越弱。

3.2 (二) 空间计量模型设定

空间杜宾模型同时考虑了被解释变量和解释变量的空间溢出效应，不仅能够衡量县域金融发展空间溢出效应，还能够通过政府干预变量及一系列控制变量的空间滞后项揭示政府干预的空间溢出效应。本文构建的空间面板杜宾模型 (Spatial Panel Durbin Model, SPDM) 如公式 (2) 和 (3) 所示。

$$y_{it} = \alpha + \rho \sum_{j=1}^n W_{ij} y_{it} + X_{it} \beta + \theta \sum_{j=1}^n W_{ij} X_{itj} + \varphi_i + \tau_t + \varepsilon_{it} \quad (2)$$

$$y_{it} = \alpha + y_{i(t-1)} + \rho \sum_{j=1}^n W_{ij} y_{it} + X_{it} \beta + \theta \sum_{j=1}^n W_{ij} X_{itj} + \varphi_i + \tau_t + \varepsilon_{it} \quad (3)$$

公式 (2) 为静态空间面板杜宾模型，其中 y_{it} 是被解释变量，即县域 i 在年度 t 的金融发展水平，公式 (3) 则在公式 (2) 基础上加入了被解释变量的时间上的一阶滞后项 $y_{i(t-1)}$ ，从而构造了动态空间面板杜宾模型，以同时考察县域金融发展

水平的时间滞后和空间滞后效应，并更为准确地反映解释变量对被解释变量影响的溢出效果。上述公式中， X 是解释变量，包括政府干预和一系列控制变量， β 是解释变量 X 的未知参数向量，体现了政府干预及控制变量对县域金融发展的影响程度和影响方向。 $\sum_j W_{ij} y_{jt}$ 是被解释变量空间滞后项，主要体现相邻县域金融发展水平之间的相互影响，其中， W_{ij} 是 $n \times n$ 阶空间权重矩阵，反映了不同县域在空间上的关系。 ρ 作为被解释变量空间滞后项的系数，则是体现上述影响的方向和影响程度，如果 ρ 显著为正，说明县域之间金融发展水平存在明显的正向空间关联，如果 ρ 显著为负，说明县域之间的金融发展水平存在明显的负向空间关联，如果 ρ 为 0 或者不显著，则说明县域金融发展水平不存在空间关联。 $\sum_j W_{it} X_{itj}$ 为解释变量的空间滞后项，用于体现其他县政府干预水平及控制变量对本县金融发展水平的影响，而系数 θ 则体现了这种影响的方向和影响程度。最后， α 是常数项， ϕ_i 表示地区固定效应， τ_t 表示时间固定效应， ε 是随机误差项，服从期望为 0，方差为 σ^2 的标准正态分布。

3.3 (三) 空间权重矩阵设定

空间计量模型主要通过空间权重矩阵 (W) 来体现变量在空间上的关系，地理上的相邻是县域金融发展产生空间关联的基本原因，据此本文设置空间邻接权重矩阵来反映这种空间邻接关系，该矩阵元素在县域单位相邻时取值为 1，不相邻时取值为 0，对角线元素设置为 0。空间反距离权重矩阵假定空间效应强度取决于距离，空间单元之间距离越接近则空间效应越强，因此对空间关系的刻画比邻接权重更加细腻。矩阵元素是根据经纬度计算出的空间单元质心之间球面距离平方的倒数，对角线元素设置为 0。为了消除权重矩阵量纲的影响，实证过程中本文对所有权重矩阵进行行标准化处理 (Row Standardization)，从而使权重矩阵每一行元素之和均为 1。最后，本文所用空间权重矩阵利用 GeoDa 1.6.7 软件生成。

3.4 (四) 指标设定及数据来源

Goldsmith 最早提出金融发展的概念并利用金融相关比率，即某一时点上现存金融资产总额与国民财富之比，来衡量金融发展水平；[17]温涛等选用货币存量对 GDP 比率、信贷存量对 GDP 比率以及经济证券化比率作为衡量中国金融发展水平的指标。[18]结合县域数据的可得性及县域金融特点，本文采用银行金融机构贷款余额与地区生产总值之比来衡量县域金融发展水平 (Findev)。一是因为当前县域层面依然以银行为代表的间接融资为主导，贷款规模对金融资源规模具有较强的代表性；二是相对于存款规模，县级地方政府更加重视并愿意出台政策吸引金融机构贷款的投放，因此贷款规模能更好体现政府干预的结果；三是目前相关部门尚未发布县域层面社会融资规模数据，金融机构以外的社会融资行为还无法精确描述。需要说明的是，由于 2012 年以及 2013 年《中国（县市）社会经济统计年鉴》中没有提供各县域 2011-2012 年的地区生产总值数据，同时考虑到县域地区第三产业总体发展水平较低，故本文所有年份均使用第一产业和第二产业产值之和近似替代地区生产总值，后续相关指标的计算亦是如此。

政府干预主要受政府干预动机和政府干预能力影响，[19]马连福和曹春方利用失业率、地方财政净收入、研发投入三项指标拟合地方政府干预指数来衡量干预动机；[20]师博和沈坤荣用地方政府支出与地区生产总值的比例来衡量地方政府的干预能力。[21]由于数据所限本文难以通过财政收支数据准确衡量干预动机，因此本文使用政府干预能力，即县级地方政府公共预算支出规模来代表政府干预。此外，本文还考虑投资水平、产业结构、经济基础、人力资本以及基础设施水平等控制变量，变量定义及描述性统计结果如表 1 所示。

表 1: 主要变量定义及描述性统计

变量名	变量代码	变量说明	平均值	中位数	标准差	最小值	最大值
金融发展	Findev	年末贷款余额 / 地区生产总值	0.798	0.646	0.729	0.002	56.289
政府干预	Govint	公共预算支出 / 地区生产总值	0.372	0.236	0.438	0.003	7.942
投资水平	Invest	固定资产投资额 / 地区生产总值	0.339	0.111	0.657	0.002	23.038
产业结构	Struct	第二产业产值 / 地区生产总值	0.607	0.617	0.204	0.000	1.000
经济基础	Ecobas	居民储蓄存款余额 / 年末总人口	0.953	0.661	1.014	0.001	15.790
人力资本	Hum-res	中学入学人数 / 年末总人口	0.079	0.074	0.035	0.001	1.549
基础设施	Infstr	本地电话用户数的自然对数	10.559	10.714	1.237	3.045	13.911

本文以全国县级行政单位作为研究对象，剔除了市辖区、直辖市所属县（市）以及因行政区划变动等原因导致部分年份数据缺失的县级单位，最终得到 1895 个县（市）样本。所有数据均来源于 2003-2015 各年《中国县（市）社会经济统计年鉴》。

4 四、实证结果与解释

4.1 (一) 县域金融发展水平空间相关性检验

基于空间邻接及空间反距离两种权重矩阵对县域金融发展及政府干预变量进行的空间相关性检验结果显示（如表 2 所示）。

表 2: 金融发展及政府干预变量 Moran's I 检验结果

年份	邻接权重矩阵		反距离权重矩阵	
	Findev	Govint	Findev	Govint
2002	0.364***	0.540***	0.225***	0.316***
2003	0.135***	0.547***	0.110***	0.318***
2004	0.280***	0.580***	0.187***	0.325***
2005	0.277***	0.466***	0.176***	0.275***
2006	0.270***	0.581***	0.161***	0.314***
2007	0.237***	0.475***	0.131***	0.287***
2008	0.354***	0.624***	0.173***	0.349***
2009	0.412***	0.607***	0.213***	0.341***
2010	0.390***	0.627***	0.211***	0.340***
2011	0.407***	0.618***	0.221***	0.346***
2012	0.384***	0.643***	0.216***	0.360***
2013	0.368***	0.656***	0.209***	0.359***
2014	0.313***	0.646***	0.180***	0.360***

注：*、**和***分别表示在 10%、5%和 1%的统计水平上显著。

两种空间权重下，2002-2014 年间我国县域金融发展及政府干预变量均在 1%的水平上显著大于 0，明显偏离空间随机分布，表明临近县域的金融发展及政府干预存在明显的空间相关性，进而从数据驱动角度初步验证了假说 H1，即县域金融

发展及政府干预具有空间关联效应，也表明在分析政府干预对金融发展的影响时，不能忽略地理因素和空间溢出效应的影响，因此需要引入空间计量模型展开进一步分析。上述空间相关性检验借助 Stata 14.0 软件实现。

4.2 （二）空间面板杜宾模型估计结果

由于空间相关性的存在，用普通最小二乘法估计空间模型是有偏的和不一致的，因此需要采用极大似然方法（MLE）对空间面板杜宾模型（SPDM）进行参数估计，[22]估计过程借助 Stata 14.0 软件实现。表 3 分别报告了两种空间权重下静态和动态空间面板杜宾模型的四组估计结果。对于面板数据模型中随机效应和固定效应的选择，现有研究认为当样本局限于一些特定的个体时，固定效应模型效果更好，实证过程中的 Hausman 检验结果也支持了对固定效应模型的选择。根据 Anselin 的判断准则，[23]本文进一步利用自然对数似然函数值（LL）和赤池信息准则（AIC）在模型的不同固定效应类型中进行选择，结果显示包含时间和地点双向固定效应的模型估计结果是最优的。

表 3 估计结果显示，各模型中体现县域金融发展空间关联程度的空间自相关系数 ρ 均在 1% 的水平上显著，说明县域间金融发展水平存在空间关联效应。正向的空间自相关系数说明地理上相邻或相近的县域也具有相似的金融发展水平，意味着某个县域金融发展水平的提高将会对其他县域的金融发展产生积极的影响，而这种积极影响可能来源于县域经济发展的相互促进以及学习与合作关系的深化。同时，不论是静态空间面板杜宾模型还是动态空间面板杜宾模型中，反距离权重矩阵下县域金融发展的空间自相关系数 ρ 明显高于邻接权重矩阵，其自然对数似然函数值和赤池信息准则检验值也更优，说明距离越近的县域其金融发展的空间关联水平越高，即空间溢出效应越强。换言之，即便两县没有共同的边界，只要它们地理上相互接近，其金融发展水平同样存在空间上的相互影响。上述结果共同验证了假说 H1。

进一步地，在考虑金融发展一阶滞后项的动态空间面板杜宾模型中，金融发展一阶滞后项的估计系数在两种权重下分别为 0.325 和 0.320，且在 1% 的水平上显著，表明前期县域金融发展水平会对当期金融发展水平产生积极影响。金融发展一阶滞后项的引入使县域金融发展的空间自相关系数 ρ 较静态模型有所降低，但其自然对数似然函数值和赤池信息准则检验值比静态模型更好。这可能是因为静态模型仅仅考虑了当期解释变量对金融发展的影响，将它们对金融发展影响的滞后效应以及制度、环境或技术等不可观测因素对金融发展的影响一并归结到空间相关性当中。而在动态模型中，用金融发展变量的一阶滞后项表征这些滞后效应和不可观测因素，将其对金融发展的影响从空间结构因素的影响中分离出来以后，可以发现静态模型高估了空间相关对金融发展产生的影响。

最后，根据解释变量及控制变量的系数估计值及其显著性水平检验结果，可以发现政府干预及控制变量均在不同程度上对本县域和其他县域金融发展产生正向或者负向的影响，这意味着如果在模型估计中忽略了政府干预及控制变量的空间滞后项，将会因为遗漏变量而造成估计结果的偏误，因此在建立计量模型对县域金融发展进行研究时，必须考虑这些变量的空间溢出效应。但是根据 LeSage 和 Pace 的研究，利用传统计量模型的点估计方法来检验变量是否存在空间溢出效应得到的结论是有偏的，即解释变量的系数估计值并不代表真实的偏回归系数，无法用于解释它们对金融发展的空间溢出效应。[24]为此他们提出应根据解释变量对被解释变量影响来源的不同，利用求偏微分的方法将解释变量的系数估计值分解为直接效应、间接效应和总效应来观测解释变量及控制变量对金融发展的空间溢出效应。

表 3: 空间面板杜宾模型估计结果

变量及检验	邻接权重		反距离权重	
	静态SPDM	动态SPDM	Static SPDM	Dynamic SPDM
ρ	0.3380***		0.7120*** (49.95)	0.5390*** (34.11)
(40.93)	0.2400***			0.3020*** (51.20)
(26.86)	0.7120***		0.4150*** (25.75)	0.3430*** (22.03)
(49.95)	0.5390***		0.1180*** (14.49)	0.0950*** (12.48)
(34.11)			-0.5850*** (-12.91)	-0.5070*** (-11.00)
L1. Findev		0.3250***	0.0195** (2.37)	-0.0138* (-1.70)
(55.57)		0.3020***	1.6350*** (11.85)	1.8210*** (11.00)
(51.20)			-0.0185** (-2.01)	-0.0296*** (-3.37)
Govint	0.4420***		-0.4100*** (-7.83)	-0.3530*** (-6.97)
(26.60)	0.3610***		-0.0298 (-1.17)	-0.0175 (-0.73)
(22.59)	0.4150***		1.3940*** (9.15)	0.8800*** (5.76)
(25.75)	0.3430***		0.1250*** (5.71)	0.1350*** (6.25)
(22.03)			-2.7200*** (-5.11)	-3.4620*** (-5.97)

Invest	0.1230***		0.0030 (0.08)	0.0219 (0.61)
(15.08)	0.0974***		Yes	Yes
(12.88)	0.1180***		Yes	Yes
(14.49)	0.0950***		-13778.240	-10777.400
(12.48)			27584.480	21584.810
Struct	-0.4620***		24635	22740

注：*、**和***分别表示在 10%、5%和 1%的统计水平上显著；括号内的数值为标准误。为控制篇幅，本文未报告随机效应及各种固定效应检验结果，如读者感兴趣可向作者索取，下表同。

4.3 （三）政府干预对县域金融发展的空间溢出效应分解

根据 LeSage 和 Pace 的研究并结合本文研究内容[24]，直接效应代表政府干预及控制变量对本县的溢出效应，即对自身金融发展的平均影响；间接效应代表政府干预及控制变量对其他县域的溢出效应，即对其他县域金融发展的平均影响；总效应表示政府干预及控制变量对本县域和其他县域金融发展的平均影响。具体分解结果如表 4 所示。

4.3.1 政府干预在县域内的空间溢出效应。

根据表 4 的效应分解结果，各个模型中政府干预对金融发展的直接效应均显著为正，即政府干预对本县域金融发展产生了正向空间溢出，表明政府干预对本县域金融发展水平的提高发挥了积极作用，从而验证了假说 H2。

究其原因，“进取型政策”和“保护型政策”均能够提高本县域金融发展水平。一方面，县域经济由大量中小微企业和农村经济主体构成，现有产权制度及信用体系的缺失对县域金融发展产生了显著的“硬约束”，所以产权制度的完善、信用体系的建设以及政府增信体系的建立对县域金融发展尤为重要。县级政府出台“进取型政策”，可以完善产权制度和信用体系、引导创新金融产品和服务方式等提高产业对金融资源的吸附能力，从而提高金融发展水平。另一方面，地方政府还通过“保护型政策”影响金融资源的实际成本和名义成本，如利用各种税费减免、补贴奖励等政策吸引金融机构的入驻和信贷投放力度的加大，从而提高本县域金融发展水平。此外，动态空间面板杜宾模型中政府干预对本县域金融发展的影响较静态模型中有所减弱，主要是因为上述政策措施的时间滞后效应在静态模型中被一并归入当期影响中所致。

4.3.2 政府干预在县域间的空间溢出效应。

表 4 的效应分解结果还显示，各个模型中政府干预对金融发展的间接效应均显著为负，表明政府干预对其他县域金融发展产生了负向空间溢出，即某县域的政府干预不利于其他县域金融发展水平的提高。其中，动态空间面板杜宾模型中这种负向溢出作用更突出，主要是因为这种负向溢出的时间滞后效应在静态模型中被掩盖所致。上述估计结果共同验证了假说 H3。这一结论揭示了地方政府在干预政策选择上存在的倾向性。

现实中“合作型政策”的有效实施往往需要全省层面甚至全国层面制度环境的改革和完善为前提，由于缺乏顶层制度设计，县级地方政府出台的此类政策往往是各

自为战，难以发挥区域协同效果。同时，这些政策的制定和实施投入大、见效慢，对地方财力要求更高，例如县域范围内征信体系建设需要整合金融机构及其监管部门、公安、工商、税务、质检、社保、交通等多部门的信息，因此协调难度极大、成本极高。而出台“保护型政策”对于县级地方政府来说更加容易，也更符合地方政府在政策选择上的偏好。笔者调查还发现，地方金融管理部门往往将年富力强的工作人员和更多的财政资金配置到“保护型政策”的实施中，此类政策也更容易受到地方领导的青睐。实施过程中，其政策标准还会根据周边县域的最新政策做出动态调整。因此，促进县域金融发展不仅要加大政策投入，更需要做好县域间政策的统筹协调。

4.3.3 政府干预在县域间的总体溢出效应。

根据表 4 中总效应的分解结果，虽然空间邻接权重下政府干预变量的总效应系数均显著为正，但是由于受到负向间接效应的影响，其系数值明显小于直接效应。而反距离权重下，政府干预变量正向的直接效应很大程度上被负向的间接效应所抵消，因此其总效应并不显著。以上结果意味着政府干预对本县域金融发展的正向溢出作用被其他县域政府干预的负向溢出效应削弱，说明地方政府围绕金融发展还存在进一步协调与合作的空间。

表 4: 空间溢出效应分解结果

效应及变量		邻接权重		反距离权重	
		静态SPDM	动态SPDM	静态SPDM	动态SPDM
直接效应	Govint	0.4360*** (27.84)	0.3540*** (27.34)	0.4120*** (26.56)	0.3390*** (26.43)
	Invest	0.1240*** (18.78)	0.0989*** (12.51)	0.1190*** (17.71)	0.0963*** (12.02)

	Struct	-0.4370*** (-8.89)	-0.4310*** (-8.31)	-0.5550*** (-11.35)	-0.5050*** (-9.72)
	Ecobas	0.0205** (2.48)	-0.0112* (-1.45)	0.0240*** (2.97)	-0.0117 (-1.54)
	Humres	1.5480*** (9.77)	1.6710*** (10.73)	1.5660*** (9.88)	1.7820*** (11.36)
	Infstr	-0.0148 (-1.51)	-0.0277*** (-2.90)	-0.0181* (-1.84)	-0.0288*** (-3.01)
间接效应	Govint	-0.0934*** (-2.80)	-0.1180*** (-4.58)	-0.3930** (-2.26)	-0.3740*** (-3.89)
	Invest	0.0367** (2.27)	0.0171 (1.32)	0.1760** (2.28)	0.0725* (1.66)
	Struct	0.3660*** (3.74)	0.2620*** (2.67)	3.3500*** (6.49)	1.3400*** (3.87)
	Ecobas	0.1270*** (8.41)	0.0968*** (7.85)	0.4710*** (7.00)	0.2740*** (7.20)
	Humres	-0.0367 (-0.10)	-0.9100*** (-2.66)	-5.2550*** (-2.63)	-5.4540*** (-4.40)
	Infstr	0.0271 (1.34)	0.0152 (0.74)	-0.0402 (-0.36)	0.0159 (0.19)
总效应	Govint	0.3430*** (11.51)	0.2360*** (10.49)	0.0188 (0.11)	-0.0358 (-0.39)
	Invest	0.1610*** (10.14)	0.1160*** (8.79)	0.2940*** (3.91)	0.1690*** (4.03)
	Struct	-0.0715 (-0.69)	-0.1690* (-1.79)	2.7950*** (5.44)	0.8360** (2.51)
	Ecobas	0.1480*** (9.40)	0.0856*** (7.48)	0.4950*** (7.41)	0.2620*** (7.25)

	Humres	1.5110*** (3.89)	0.7610** (2.05)	-3.6890* (-1.86)	-3.6720*** (-2.96)
	Infstr	0.0123 (0.55)	-0.0125 (-0.55)	-0.0582 (-0.53)	-0.0129 (-0.15)

注：*、**和***分别表示在10%、5%和1%的统计水平上显著；括号内的数值为标准误。

4.4 (三) 控制变量对县域金融发展的空间溢出效应

表 4 中对控制变量的系数分解结果显示，投资水平在各个模型中对县域金融发展的直接效应、间接效应及总效应大多显著为正，表明投资水平对于本县域和其他县域金融发展均产生了正向的空间溢出，因为投资有利于促进县域之间产业发展水平及区域协同效果，从而进一步提高县域经济对金融资源的吸附能力，最终提高所有县域金融发展水平。产业结构对本县域金融发展水平存在负向空间溢出，而对其他县域金融发展水平存在正向空间溢出，同时产业结构对县域金融发展的总效应不够稳健，这可能是因为县域产业结构的优化并没有吸引更多金融资源流入，县域产业结构优化与金融发展的关联性仍需进一步提升。经济基础对本县域金融发展的溢出效应不够稳健，而对其他县域金融发展呈现正向空间溢出，可能是因为县域经济发展与金融发展的良性循环尚未完全形成。人力资本对本县域金融发展产生了正向空间溢出，但对其他县域金融发展的空间溢出效应显著为负，其总效应也不够稳健，这与县域层面人力资本流动尚不够充分有关。最后，基础设施对本县域金融发展呈现较弱的负向空间溢出效应，对县域间及县域总体的空间溢出效应均不显著，说明县域层面基础设施建设水平依然较低，且尚未实现完全的互联互通，其对金融发展的整体推动作用有待进一步发挥。

5 五、结论与建议

本文采用全国 1895 个县(市) 2002-2014 年的面板数据, 通过构建静态和动态空间面板杜宾模型, 基于空间关联视角实证检验了县域金融发展的空间溢出效应以及政府干预对县域金融发展在县域内和县域间的空间溢出效应。本文主要得出如下结论: 第一, 县域金融发展水平存在空间关联效应, 地理上相邻或相近的县域具有相似的金融发展水平, 县域金融发展水平的提高对周边县域金融发展水平具有促进作用。第二, 政府干预是影响县域金融发展的重要因素。而且在空间关联视角下, 政府干预对县域金融发展具有空间溢出作用, 政府干预对本县域金融发展存在正向空间溢出效应, 而财政分权条件下政府之间的竞争使政府干预对其他县域金融发展产生了负向空间溢出。第三, 县域金融发展水平具有时间滞后效应, 其受到上期金融发展水平的积极影响。空间溢出作用的存在也使投资水平、产业结构、经济基础、人力资本以及基础设施对金融发展的不同影响在县域内和县域间呈现出进一步的差异。

基于以上研究结论, 本文提出如下建议。第一, 中央政府应加强地方金融改革的顶层制度设计, 如构建全国统一的征信信息系统、进一步推进产权制度改革等等, 消除地方政府利用补贴、奖励等优惠政策干预金融机构和金融市场微观决策的行为, 引导地方政府由“支出竞争”转向“制度竞争”。同时建立地方政府官员的长效考核机制, 避免地方政府及其金融管理部门因追求金融业产值及税收的短期增长而陷入无序竞争。第二, 地方政府应进一步明确自身在地方金融改革与发展中的职能边界, 致力于市场基础完善、市场秩序维护、投资者保护及风险教育等工作, 同时围绕上述工作加强与其他地区的学习、交流与合作, 放大政府干预在区域内的正向空间溢出作用; 避免使用“保护型政策”, 减少对金融市场和金融机构的直接微观干预。此外, 对较高层级的地方政府而言, 在加强“兄弟”层级政府沟通协调的同时还应该协调下一级地方政府的竞争关系, 着力于构建下级地方政府的良性竞争机制。第三, 县级地方政府还应该持续推进产业结构优化, 提高经济增长质量和效果, 提升产业发展、经济增长与金融发展的关联水平, 夯实金融发展的

基础。加强基础设施建设，实现区域间基础设施的互联互通，发挥其对区域金融发展的整体促进作用。提升县域人力资本水平并促进区域人才流动，发挥智力资本对县域金融发展的溢出作用。

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Part 1 Framework conditions and macro-economic analysis

C 数字世界中中小企业的风险管理

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摘要

对于数字世界中的中小企业（SME）来说，风险管理变得越来越重要。有关风险的谈论几乎随处可见。风险威胁着中小企业，而数字化风险也使风险管理更为重要。国际标准化组织和 IRM（风险管理研究所）对稳固风险管理反复加以考虑。这些定义也适用于中小企业。原则，框架和流程是健全风险管理的三大支柱：ISO 31000 的 11 项原则是数字世界和 SMI 风险管理的基础。基于 ISO 31000 的风险管理框架的理论来说，进行风险管理工作至关重要，而且它应是一个全面的，综合的强化循环流程。

所以这对中小企业意味着什么呢？这意味着企业需要列出各种风险，各种可能对企业造成影响的风险，并且评估四个主要类别，包括市场，信贷，运营和业务风险。市场和信用风险更适合通过市场价格的波动来进行量化评估。对于其他风险类别，若想进行成功的风险分析，还需要深入了解潜在因素。对于一些风险来说，定性分析更适合对齐的评估。作为评估的结果，风险矩阵描述了风险发生的可能性和影响。

评估后需要选择适当的风险对策，这里有五种可行的风险对策：（1）规避风险是有效的，但这几乎是不可能实现的策略。（2）减轻风险是一个可行的战略，重点是减少风险事件的可能性和/或影响。（3）风险可以转移，例如保险，（4）风险可能与其他人分享，（5）风险可能（而且应该）在某些情况下保留，但这必须出自公司意愿

关键词：

风险管理, 数字化, 中小企业

JEL-Classification:

G32, O33

1 介绍

风险管理如今变得越来越重要，尤其是对于当今数字世界的中小型企业。哪怕是漫无目的地搜索着新闻头条，关于风险的搜索结果也会明确地告诉你：风险无处不在。因此，任何企业都应认真对待风险管理。

首先，我们可以自国际标准化组织（ISO）和风险管理研究所（IRM）了解到风险管理的定义。ISO 是一个独立的非政府国际组织，拥有 162 个国家标准机构的成员。通过其成员，ISO 汇集了专家分享知识，制定自愿的，基于共识的市场相关国际标准，以支持创新并为全球挑战提供解决方案。

几乎任何组织的活动都可能存在风险。而组织管理风险的第一步是评估风险，这意味着将风险加以识别，分析并评估。因此，在本文的第二章中对风险评估进行了更详细的介绍。

作为风险评估的结果，组织应决定是否应该通过风险对策来改变风险程度，以便满足其风险评定标准。因此，本文的第三章和最后一章涉及风险处理。

ISO 31000 是风险管理的标准，它由 ISO 技术管理委员会风险管理工作组编制。

虽然所有组织都在一定程度上对风险进行着管理，但该国际标准建立了一些原则，通过满足它们可以使风险管理更为有效。该国际标准还建议各组织开发、实施并不断完善一个框架，以使风险管理流程得以整合到组织的整体治理，战略和规划，管理，报告流程，政策，价值和文化中。

组织必须确定风险管理组织的总体目标，策略和政策：对风险进行分类和识别的标准；风险评估方法；风险决策责任；应对风险的资源；内部和外部报告；并教育人员进行风险管理。

原则，框架和流程是合理风险管理的三大支柱。

根据 ISO 31000，有 11 项原则。数字世界也为中小型企业提供了坚实的风险管理基础。这些原则要求：一、创造价值；二、组织流程的组成部分；三、决策的一部分；四、聚焦不确定性；五、系统性、结构性和时效性；六、有效信息利用；七、定制化；八、考虑人员和文化因素；九、透明度和包容性；十、动态的、持续的应对变化；十一、持续改进与强化。

进行风险管理工作时，对 ISO 31000 的风险管理框架进行参考至关重要。该框架从顶层明确授权和承诺开始，之后根据与现任务的交互开始了一个循环流程。流程的第一步是设计风险管理框架。一旦设计完成，风险管理框架就会生效。监测

和审查框架是循环的下一步。循环完成于对框架的持续改进，这些改进框架会影响今后对框架的设计，并且结束循环流程。

基于 ISO 31000 的风险管理流程是全面的，综合的和强化的过程。它始于建立环境，以风险评估为核心部分，其中包括风险识别，风险分析和风险评估。风险评估之后是风险处理。这个过程还包括“监督和审查”和“沟通和咨询”作为附带步骤。风险管理流程的所有要素都紧密相连。

基于这个介绍，中小企业需要了解这对他们意义何在，而不是认为“这只是大企业该做的”，或者“我只是一个商店”，“数字化太复杂了”，或者“我还是祈祷万无一失吧”。

2 风险评估

事实上，开始进行风险评估对于数字世界中的中小企业来说并不是太困难。首先，他们需要制定一份清单，来标记那些可能影响中小企业的风险。通常这些风险可分为四类，包括市场风险、信用风险、操作风险和业务风险，且每种风险都可继续细分。例如市场风险可以细分为利率变化，原材料价格变化，汇率变化等，而业务风险可以细分为法律风险，监管风险，业务量和利润率变化，竞争者以及数字化。

一旦发现风险，下一步便是评估其特征。比如在市场风险中，市场价格的波动是这类风险评估的重要考虑因素，像德国国债远比宝马股票的价格稳定，而这可能并不会使人感到意外。然而，另一个例子则是原油价格比汽车制造商的股票波动性更强。而且可能不太引人瞩目的例子是近几年咖啡价格的波动幅度比原油价格更大。

分析信用风险的一个例子是德国违约案件的数量（'Insolvenzen'）。从 2002 年到 2010 年这个数字增加了一倍多。在 2010 年至 2016 年之间，这一数字从每年的 133'000 例下降到不到 98'000 例。这些数字表明了违约的大幅波动。

操作风险难以量化。在这种情况下若想要分析成功，需要深刻理解潜在因素。操作风险可以细分为内部（公司内部）和外部因素导致的风险。

商业风险对中小企业具有高度关联性。德国工业的相当一部分与汽车有关，德国汽车业总销售额的大幅波动便可称之为一次商业风险。2006 年至 2015 年的十年间，德国国内汽车销售额的年增长率在 -15% 至 +12% 之间。而考虑到整体规模，出口销售额对整个行业来说更加重要（汽车行业年总销售额为 2630 亿欧元，相比之下国内销售额为 1420 亿欧元）。与此同时，出口销售的波动幅度大大高于 2006 年和 2015 年同期十年的增长率 -24% 至 +32%。中小企业往往是其中的供应商，因此更要需要熟悉他们所依赖的行业领域。对于其他业务风险，例如项目风险，主体为定性的评估方式比定量更适合于风险评估。

为了完成评估，企业应使用一个简单的工具：风险矩阵，对矩阵中所识别和分析的各种风险进行分类极其重要。这样的风险矩阵可通过方格的形式，来表现出风险发生的可能性和影响

图 1: 风险矩阵示例

		Likelihood of occurrence		
		Unlikely	Possible	Likely
Impact	serious			
	high			
	medium			
	low			

3 风险对策

有五种可行的风险对策：（1）规避风险是有效的，但这几乎是不可能实现的策略。（2）减轻风险是一个可行的战略，重点是减少风险事件的可能性和/或影响。（3）风险可以转移，例如保险，（4）风险可能与其他人分享，（5）风险可能（而且应该）在某些情况下保留，但这必须出自公司意愿。

规避风险是应对风险中最为激进的手段。它确实有效，但几乎不可能实现，不过它可以避免一些特定的风险。例如，几家银行在金融危机后停止了交易服务，对此许多网上供应商为了避免风险便只下了预付定单。又如一些超市和杂货店为了规避数字化平台的的风险，便只开实体店。尽管如此，企业承担风险仍不可避免，还需要考虑进一步的战略。

风险缓解是一个可行的策略，它包含两个方面。第一，风险缓解意味着减少风险发生的可能性。对于当今的数字世界，最好的一个例子便是采用尽可能好的方式来扫描网络病毒。其次，如果风险事件发生，应该降低风险的影响。就刚刚病毒的例子来说，该类措施表现为建立完整及时的备份和应急计划。

风险可以转移，保险就是如此。将风险传递给另一方是很常见的，但请记住，风险的转移不会改变风险。转移风险通常意味着一方向另一方支付保险费。而且为了避免传统的道德风险问题，一旦一方拒付免赔额，也就可能表明其愿意承担责任，并应对道德风险问题。

风险分担为各方按比例分配风险。一些中小企业有客户和供应商共同分担风险；银行会要求他们的客户保护好账户密码和/或强迫他们定期更换密码，客户们可能需要使用多个应用程序才能登录。（较大）项目风险则由多个相关方分担。

维持风险应当出自公司的本身的意愿。如果公司中没有其他人比所有者更好地了解风险，那么当前公司所有者所做的决定便是最正确的决定，这种策略往往与这种情况息息相关。在这种情况下，制定预算储备以应对的风险导致的不可预见损失并制定应急计划，才是明智的战略。

参考坚实的风险评估，并由此仔细选择正确的战略或其组合，那么无论是当今数字世界的风险还是其他风险，中小企业都将能妥善应对。

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Part 1 Framework conditions and macro-economic analysis

D 德国中小企业的剥削陷阱 - 成因及出路

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摘要：

德国中小企业（SMEs）由于其以利基为导向、保证质量和改进产品的专业动机等特点而相当成功。因此，它们不愁订单，业务国际化并专注于其核心业务。然而经验表明，成功可能导致失败，“创新者的困境”也时常发生。因此，过分专注于核心业务会使企业花费大量人力物力，陷入“剥削陷阱”，进而导致更新及商业模式创新的不足。这种现象的成因是什么？为了规避陷阱可以做些什么？该领域的实例以及创业理论的经验教训为我们解决此类问题并进一步探索提供了思路。以下内容主要适用于德国中小企业，但在一定程度上中国企业也有借鉴之处。

关键词：

德国中小企业；两手同利；探索；剥削

JEL 分类：

L21; L26; O31

1 引言

文献表明，德国的中小企业情况十分优越。在很大程度上，它们在典型的投入和产出指标方面表现强劲，在全球市场利基方面处于有利地位，并且业绩十分出色（联邦经济和技术部，2013）。德国中小企业中有超 1,300 个“隐形冠军”，这一数量远超其他任何国家（联邦经济和技术部，2013）。具有数十年中小企业管理经验的专家赫尔曼西蒙提出了“**German Mittelstand**”这一术语，用以阐述德国中小企业领域“隐形冠军”数量之多的状态（西蒙，1992, 1996, 2009）。除此之外，奥德雷奇和莱曼（2015）也指出了德国小型企业对经济的重要作用，以及它们调整自身及经济的能力，特别是在新千年开始后的经济危机中。

但除去这些传统优势，德国中小企业在许多方面都处于劣势。鉴于中国通过收购一些著名的德国中小企业公司以进行“全球化”这一事实（例如美的收购机器人公司 **Kuka**，北汽福田收购博格华德品牌以制造电动汽车等），数字化转型给非流动或流动缓慢的企业带来了负面影响。明显可以看出，德国中小企业在即期业务方面发展迅猛，但要跟上风云变幻的国际环境所进行的业务更新却十分吃力。在此背景下，我们引入捷克的两手同利理论（1991）。捷克指出探索和剥削两者间存在差别——前者注重挖掘创新商务模式，后者注重即期业务；两手同利试图在两者之间寻求平衡。本篇文章以德国中小企业公司剥削有余而探索不足的事实为立足点，围绕“剥削陷阱”这一问题展开讨论。

在这一背景下，本篇文章的研究问题为：如此多的德国中小企业陷入剥削陷阱的原因是什么？解决办法有哪些？研究方式主要为概念研究，此研究方式基于创业理论及资源观等理论角度。

2 概述何为德国中小企业

一些针对德国中小企业公司中“隐形冠军”，即那些全球市场领导者的分析常指向行业背景（西蒙，1996；西蒙，2009）。以下几方面大体概括了行业背景。

首先，各公司主要属于中等规模，甚至可以被划分为小规模的大公司（联邦经济和技术部，2013）。然而，在本质上，他们的内部结构和理念体系与大公司相差甚远，所以把他们归入中小企业比较合适。除此之外，德国中小企业十分注重企业对企业市场（约90%，据联邦经济和技术部，2013）。这方面的相关行业大多为机械工程，电气工程，工业产品，汽车部件，工厂工程，制药和医疗技术，高科技解决方案，化工产品，工业服务（和物流）以及日用品等。许多公司仍具有原有背景，但在早期发展过程中内化了外部知识，因而也具有了高度的专业化水平。

除了这些或多或少的“地形”信息外，德国中小企业公司还有一些更具特色的特征，可以帮助解释他们在全世界范围内的具体产出和定位。在多种因素中，以下几方面占主要地位（西蒙，1992；西蒙，2009）：（1）在中世纪形成的社会学术语：中层阶级。它代表处于贫穷农民和工人（“下层阶级”）和富有的贵族和神职人员（“上层阶级”）之间的阶层。中产阶级比任何其他阶级更具有流动性，因此，中产阶级的人们乐于理财，并抓住向上层流动的机会 - 以不确定但可能的方式致富。（2）历史时期的几个世纪中，德国并不是以单一民族的独立国家形式存在的。即便是在19世纪，德国的领土也是由许多松散结合的“州”组成。越界并不罕见，甚至是稀松平常的。与各州情况相适应的带有州际意味的定位开始出现。（3）与其他很多邻国不同，德国未曾拥有作为社会和政治生活枢纽的真正首都，柏林市的中心地位是近代兴起的。所以，德国的一些地区都十分发达，并各自有着“区域首都”。（4）德国毗邻两海，地处欧洲中心，优越的地理位置为发展提供了便利。因此，德国企业的国际商务发展较早。（5）与此相关，商务精细化趋势明显，同时手工业及技术能力的发展加速着这一进程。这使得德国企业传统优势初具雏形，也为快速发展的技术制造业打下基础。（6）由于传统的科层制，特别是普鲁士体系，组织的专长是可以利用的。经验表明，如今看起来像是阻碍变革的东西，在以前是撬动职业化的强有力的杠杆。（7）职业化的教育制度为德国中小企业公司注入新血液。德国拥有一套高度成熟的双重教育制度，学生同时接受岗位培训和学校学习两方面的教育。

上述因素并不能完美地反映德国中产阶级的特点。为更好地理解德国中产阶级，我们可以把其视为一个区域治理结构的原型，与硅谷模式（奥德斯，2017）作对比。

图表 1 阐释了二者之间的差别。

图表 1: 阐释了二者之间的差别。

德国中小企业（中产阶级）	硅谷模式与创业蓝图
主要推动力：地方性制造业技术	主要推动力：新兴技术
家族传统及基层	全球创业中心的企业家思想
基于实证研究及熟练的劳动力	基于基础研究及顶尖人力资源
薪资保持一定水平	高薪
逻辑稳定	逻辑不定
发展缓慢	照比例增长
金融及其他资产的传统来源	创新的采购方式

图表 1 德国中产阶级对比硅谷模式（奥德斯，2017）

如上所示，德国以自治及相关经验取胜，这些经验是世代学习的积淀。与硅谷不同，这些经验也阻碍了企业和人民的创新性变革。

此外，德国中小企业倾向于创建企业家族，这使得各自的企业具有更高层次的稳定性。商业区普遍认为家族传统似乎更能与成功挂钩。有时，当地以这些企业为豪，居民也以进入社会认可度高的公司工作自豪。

劳动力并不一定有学术背景。另外，企业中的许多人并不具有创业精神。他们接受了系统教育，技术精细化且成熟，但不一定像硅谷模式那样以高科技为导向。这就是为什么德国员工认为他们得到平平的薪资可以接受，但硅谷的员工能得到更多的薪水以支付生活费用。

德国中小企业对于发展及有计划的创新持开放态度，但这些改变并不会造成真正的扰动。各自的价值体系中，公司融资发展或改变的速度并不重要，最重要的是稳定。这也是德国中小企业区别于硅谷的明显差异。

依据上述标准，我们可以对德国中小企业有一个大体清晰的认识。值得注意的是，德国中小企业绝不是相似公司群体的相干体，企业与企业之间有着显著的不同。然而，上述特点对总结其整体相似性具有指导意义。

3 德国中小企业剥削陷阱的成因

上述论证为我们探究剥削陷阱及其成因提供了依据。捷克（1991）指出，德国中小企业处于进行有效益且有效率的核心业务的有利位置，剥削程度也相应较高。剥削促进有力的全球定位、可靠的国际增值体系及代表着高质量产品服务的知名品牌的形成，这些都是利基市场领导力不可或缺的。因此，这些企业的核心业务常超负荷运转。

然而，这种优先立场是以牺牲有限的回旋余地和超出其核心业务范围的活动（如发展未知业务）的时间为代价的。信息技术部门的状况就是一个很好的例子。员工规模小且全员超负荷工作，应对数字化转型挑战（如线上商店等大中规模解决方案，或其他数字化“软模式”）的空间十分有限。换句话说，他们高度重视基于细化资产的核心业务。就此而言，员工会精于日常业务，奖励机制也鼓励他们日复一日在固定轨道上工作。从资源基础论（迪耶克斯和库尔，1989；弗赖林，2004）的角度来看，核心业务活动具有强大的资产质量效率，这种效率可以提高业务绩效。

但这对探索意味着什么？基本上，德国中小企业公司明白，要在高科技全球市场利基中守住地位，创新是很有必要的。但他们创新的方式基于之前几十年来一直占主导地位的线性创新模式。近代时期，颠覆性创新质疑了许多行业的线性创新思维（克里斯滕森，2003），特别是挑战着那些不改变其创新逻辑的公司。德国中小企业的创新概况如下：（1）德国中小企业仍抗拒开放创新（切斯布鲁夫，2003）。他们不信任这种开发新知识产权的方式，更喜欢“受保护”的创新模式。这有助于避免知识溢出，但是以有限的“创意流入”为代价。由于这或多或少牵扯到主导地位的创新逻辑问题，因此这些公司仍处于未转向全新创新逻辑的阶段——这是一个难以采取的步骤，需要基础学习和忘却学习过程。（2）在这些公司内部，部分员工参与到创新活动中。然而，“创新范围”在空间和数量方面受着一定程度的限制，创新活动更多遵循项目导向的规划方法，而不是让位于核心业务之外的全面探索。（3）因此，创新过程更多地受到等级模式而非分层模式的管控。迄今为止，引导创新举措的大量相机抉择仍掌握在领导层管理人员手中，这导致了突破性创新的领域并不像分层控制治理那样开放。

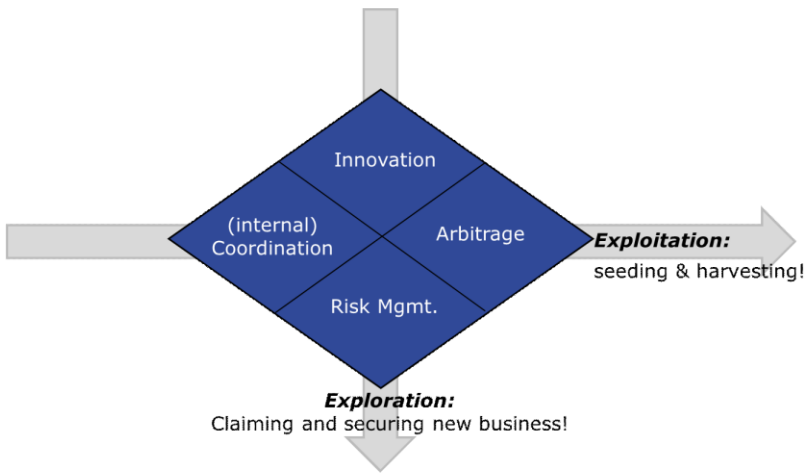
初步了解剥削陷阱后，我们将从理论的角度进一步分析这种现象。这不仅解释陷阱成因及其僵化状态，也能为长远来看跳脱这种状态提供思路。

4 成因及解决办法：从理论角度理解剥削陷阱

如上所述，创业理论这一角度可以有效反映处于剥削及探索间的企业状态。首先，本文将详细介绍创业理论，以便更好地引入两手同利的相关理论。

创业理论在商业及经济学研究中存在已久，最早可以追溯到坎蒂隆。他在 1755 年强调企业家的核心任务是风险承担（坎蒂隆，1755）。熊比特（1934）后来指出创新概念，高德纳（1990）涉及了（内部）协同的讨论，柯兹纳（1973）强调了做市套利的重要性。一眼看上去，这四种角度似乎在本质上相互对立，但它们都指出了创业行动可能涉及的方面。因此，弗赖林（2008）把这些角度合成一体，提出了兼顾四种功能的多功能角度理论。弗赖林与 Lütke Schelhowe（2014）指出，兼顾这些功能的创业行动更有利于提升绩效。图表 2 阐释了创业理论的多功能原理。

图表 1: 创业理论的多功能原理（弗赖林，2008）



创业理论的多功能原理假定创业行动范围远超探索范围，也就是指建立及发展新业务过程中的所有行为。更好地创业需要创新、冒险，因为企业家们需要花费所有技巧以从探索行为中获利，所以在实践中创业行动范围会远超探索范围。如图表 2 所示，我们可以引入两个探索概念“创新”“风险管控”及两个剥削概念“内部协同”“套利”来更好地理解这一问题。这套创业功能体系能够解释绩效相关问题：调动越多功能，功能之间越一致，绩效就越好。

这就很好地反映了德国中小企业的情况，他们在内部协同及进行增值活动方面存在优势，在许多国际市场中也凭借良好的客户关系确立了市场地位。因此，剥削方面的优势是显而易见的，而探索成为了创业行动的瓶颈。德国中小企业也尝试进行创新及风险管控活动，但不能平衡探索和剥削之间的关系使得两手同利只能是理想中的状态，也不能达到长期高绩效的设想。这种不一致在某种程度上是由外部环境变化引起的。在过去的二十年里，变化的速度急剧增加，特别是数字化转型使得颠覆性创新流程在物联网等全新业务环境中成为可能。尽管德国中小企业公司的探索活动多以线性方式发展，但社会的技术和经济发展或多或少是非线性的。

创业理论通过指出创新和风险管控，指明重振德国中小企业公司探索行动的动力。为摆脱剥削陷阱，寻求适合中小企业发展道路的新方法是亟需解决的问题。接下来本文将阐述这一问题。

5 摆脱剥削陷阱：基本考虑面及方式

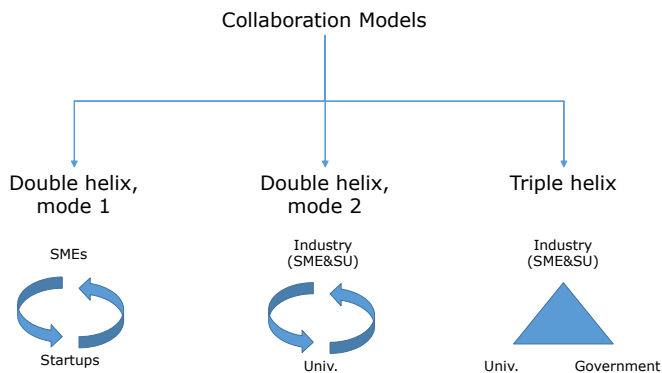
为摆脱剥削陷阱的，需注意陷入此陷阱的关键原因。通过回顾这些原因，我们可以得出改变的基本思路：（1）德国中小企业公司的一个非常根本的问题是思维方式和心态。显然，在这种根深蒂固的组织层面必须做出改变。（2）缺乏制度化的“探索范围”，这妨碍了探索活动的开展。（3）管理面的问题，过多的等级制度阻碍探索活动的发展。

思维方式。贝蒂斯和普拉哈拉德（1995）提出了“主导逻辑”现象。德国中小企业公司主导的探索逻辑更注重封闭式而非开放式创新模式，线性而非颠覆性的创新措施，存在的基本问题是如何保持长期的探索性状态和精神。有趣的是，这个问题恰好在 2017 年由来自硅谷的一家成熟的公司和世界市场领导者，亚马逊，所解决。亚马逊首席执行官兼企业家杰夫·贝索斯制定了所谓的“第一天”战略（今日美国，2017）。第一天战略指在公司建立的初期保持探索性状态。通常情况下，这种状态会随时间逐渐褪色。为维持探索状态，亚马逊公司提出了以下建议（今日美国，2017）：（1）“专注于顾客”。客户潜在的（有时会表现出的）不满能促使公司改进和重新思考他们的商业模式和解决方案。客户从未要求亚马逊推出“亚马逊金牌服务”一类的新概念，但推出后，他们十分喜欢并提出了改进建议。（2）“注重结果而不是流程”：这个问题提醒企业家和管理者不要让真正的目标失控。很多时候，他们过分关注流程管理而不是运营管理，而在探索方面，这很可能会削弱探索性状态。（3）“看看公司之外”——这一原则能帮助打开经济趋势的思路，也为当前核心业务的发展提供了动力。它激励人们将运营趋势与他们未来做或可能做的事情联系起来，这也许能为更全面的探索铺平道路。（4）“快速决策”——德国中小企业公司在决策方面倾向于三思而后行，认为详细的规划更为有益。然而，波动性，不确定性，复杂性和模糊性（“VUCA”理论，班尼特和莱莫恩，2014）为此类逻辑带来挑战。有时必须迅速做出决策，用以收集信息以检验已选择的某个方案是否有益，而太迟可能导致无法选择。应用这条原则可能对改变剥削逻辑大有益处。

制度化的探索领域。在探索过程中，制度化可能是一个恼人的词。尽管如此，没有任何“范围”，探索将无法展开。图表 3 概述了与德国中小企业公司合作推动探索的外部团体的基本合作模式。

图表 3 组织内探索模式

图表 2: 组织内探索模式



(来源: Etzkovitz, 2003)

双螺旋模式一。这种选择为知名的中小企业和年轻的创业公司提供了探索项目合作的平台。这种合作可以基于股权，甚至极端情况下意味着收购。在这方面，中小企业金融办公室实行基于资产的投资组合管理，并寻求与其（未来）核心业务相关的创业公司进行合作。由于缺乏创新资产和驱动因素，中小企业可以通过投资孵化器和加速器来获取新技术或业务概念。此外，代表中小企业的中介者主持筛选和匹配活动，以安排（以股权为基础的）合作伙伴关系。在所有这三种情况下，合理匹配打开了成功合作的大门。中小企业可以与初创公司合作加强探索的原因有很多，下面仅从中小企业的角度列举益处：吸取不同的创业精神，及不同类型的工作动机，挖掘年轻有潜力的人力资源，开创创造性蓝图，引入颠覆性概念，以取得潜在的高速业务发展，并与新心态接触（例如“快速失败”，针对最小可行产品的一种思维模式）。

双螺旋模式二。在这种模式中，中小企业和初创企业分别与大学或相似的高等教育机构合作。为了取得成功，学术界和需要合作经验及调整的商业实践之间必须加强理解。所谓的“实验室结构”就是一个典型的例子：大学主办和调整以实践为基础的学习课程，与从业者一起研究新主题、问题或开放性挑战。

三重螺旋模式。与前两种模式相比，政府机构发挥作用。他们提供的配套基础设施有利于助长首创精神。例如，如果中小企业公司探索项目与日常业务过于相近，很可能导致负面作用。有时，“绿地”项目有助于规避这个问题。

治理结构。与此背景相关的治理解决方案主要存在两个问题：首先，治理模式与层次结构的作用有关；其次，控制水平。层级意味着“纵向”协同（威廉森，1991），即由下属单位进行治理，这些下属单位设定框架并指导探索工作。层次结构在协同方面是有利的，而在激励方面则存在问题——与探索活动无关的员工会丧失积极性。因此，必须小心处理。在控制方面，综合控制涉及各中小企业探索项目的问题、方式和业绩预期等，而中等控制水平涉及问题，有限的控制只是涉及监控和监管探索措施（“袖手旁观”）。所有模式都有其优势和劣势，有时控制水平要高，有时相反。

无论最终选择如何，重要的是要测试和找到合理的方法来加强探索，并利用区域优势。目前关于商业和创业生态系统的讨论强调，让更多人和机构参与探索是有意义的。

对于德国中小企业公司来说，这可能是未来业绩的重要杠杆。中国中小企业发展道路虽有不同，但也能从此类讨论中受益。

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Part 1 Framework conditions and macro-economic analysis

E 经验证据研究：论公司新闻稿的交易量影响。德国和中国的跨国公司和中小企业的机遇？

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摘要

财务会计的目标是提供有关实体的信息，以反映其结果并对广泛的用户做出不同的经济决策。这项研究的总体思路是未知什么触发了贸易。特别是投资者并不确定信息如何与贸易活动相关。

虽然有多项研究调查了股票市场上公开信息与交易活动之间的相互关系。直到现在，证据仍未趋于明显。在这项研究中的重点是中小企业和跨国公司。作者试图解开两种不同类型的新闻稿。这里的主要研究观点是确定这些公告是否以及如何推动市场走势，以及财务报表新闻稿与正常新闻报道之间是否存在系统性差异。该研究试图解释德国和中国的中小企业和跨国公司之间是否有相互沟通的机会。

关键词：

新闻发布，中小企业，跨国公司，信息

1 前言/研究目标

本研究基于涉及财务会计和资本市场的数据库。整个话题近年来获得了很高的声誉，并且涉及多个单一问题。一般而言，财务会计的目标是提供有关实体的信息，以反映其结果，并对广泛的用户做出不同的经济决策有所帮助。其重点主要在于投资者，因为其显然是根据财务会计信息做出决策。因此，会计正试图建立投资者与资本市场之间信息的对称性。从这个角度来看，看到投资者如何处理所提供的信息是有意义的，这意味着财务报告是否实际上服务于投资者的需求。

这项研究的总体思路是，投资者仍然不知道什么触发了贸易。特别是他们不确定信息与贸易活动的关系。虽然有多项研究调查了股票市场上公开信息与交易活动之间的相互关系。直到现在，证据仍不明显。这里增加的是对企业子集进行更深入的观察，并试图分解两种不同类型的新闻稿。尤其值得一提的是，看到投资者如何对德国和中国的中小企业和跨国公司的新闻稿作出反应。

第一种类型的新闻稿将是关于公司活动的正式新闻稿，涉及产品公告或营销公告或与公司活动有关的其他问题。第二组新闻稿是与财务会计事项明显相关的新闻稿，例如：盈利公告、关于平衡表数据的新闻稿、资产负债表新闻等。

这里的主要研究视角是确定：

1. 如果和如何这些公告确实推动市场和，
2. 如果财务报表新闻稿和正常新闻稿存在系统性差异。

一般来说，主要目的是找出资本市场是否使用信息，以及是否对资本市场有任何影响。用经验术语来表示自变量是新闻发布的不同类型，因变量是市场上的交易量。

2 研究领域

研究领域分为四大块：

1. 从观点来看，第一大块是财务会计信息的交易量效应。总体思路是研究资本市场是否使用财务会计信息的问题。最着名的研究来自 Beaver (1968)，Ball&Brown (1968)。Chan (2003)，Taffler (2004) 和 Bamber / Barron / Stevens (2011) 最近也有一些发现。
2. 第二部分着重于研究会计比率资本市场相关性的研究活动。这里考察的是企业财务会计绩效通常在资本市场上重新发生。最着名的研究是 Op-pong (1980)，Foster / Jenkins / Vickrey (1986) 和 Watts / Zimmermann (1986)，Kiger (2007) 和 Ball (2010)。
3. 第三块包括研究金融中介机构的作用。这涉及到金融分析师、银行、投资公司和风险投资基金的相关性。Vergoossen (1983)，Olbert (1994)，Barker (1998)，Clatworthy (2005) 和 Gas-sen / Schwedler (2010) 最为人所知。
4. 在第四部分，科学家们关心的问题，是否存在反映股票价值的财务会计信息是否正确，这意味着如果金钱可以通过资本市场的财务会计获得。以下研究值得一提：Fama (1970)，Beaver / Clarke / Wright (1979)，Ball / Kothari (1991) 和 Chamber / Penman (1984) 以及 Ball / Chiva-kumar (2008)。

这项研究被分配到第一个区块，因为它是关于新闻稿的交易量效应，重点是中小企业和跨国公司。

3 三. 数据集

样本

该样本由 23 家公开交易的德国北部公司组成，这些公司不仅是中小型企业，还有跨国公司：

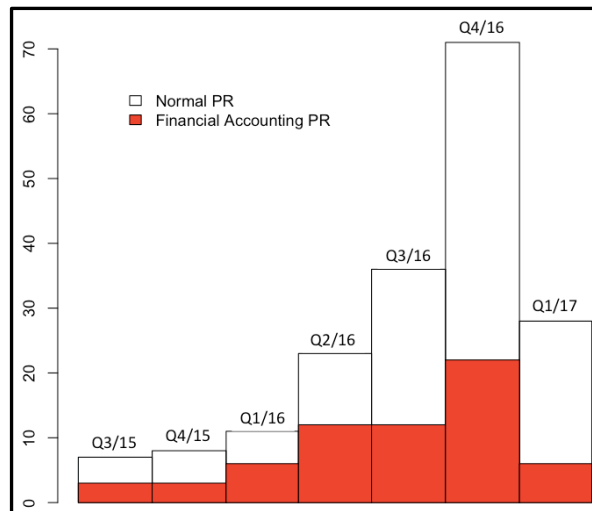
Firm	Total number of press releases Q3/2015-Q1/2017	Of which are financial accounting related
Adler	5	2
Alstria	11	5
Asian Bamboo	5	2
Aurubis	9	5
Beiersdorf	9	1
Bijou Brigitte	8	4
Capital Stage	8	2
Colexon	5	2
Deutsche Euroshop	9	6
Evotec	9	2
Fast Casualwear	11	5
HHLA	7	2
Joyou	8	1
Jungheinrich	7	1
Lloyd Fonds	11	3
Lotto24	11	2
SinnerSchrader	10	7
Tag Immobilien	9	2
Tom Tailor	8	3
UMS	3	0
VK Mühlen	7	3
VTG	10	3
Xing	4	1
Total	184	64

对于这些公司，通过使用这些公司的主页收集新闻稿，新闻稿通常始终存储和注册。所收集的数据集中于 2016 年第三季度开始至 2017 年第一季度。对于这 23 家公司，研究人员能够确定 184 份新闻稿的总数，在 184 份新闻稿中，64 份新闻稿被定性为财务会计新闻稿。

例如：Beiersdorf AG 于 2012 年 1 月 8 日发布了新闻稿，Beiersdorf 标志获得新设计。这些信息是与财务会计信息无关的正常印刷资料。但是，在 2017 年 3 月 3 日，Beiersdorf AG 公布了其 2016 财年的财务业绩。这是一种与财务会计相关的信息。

直方图

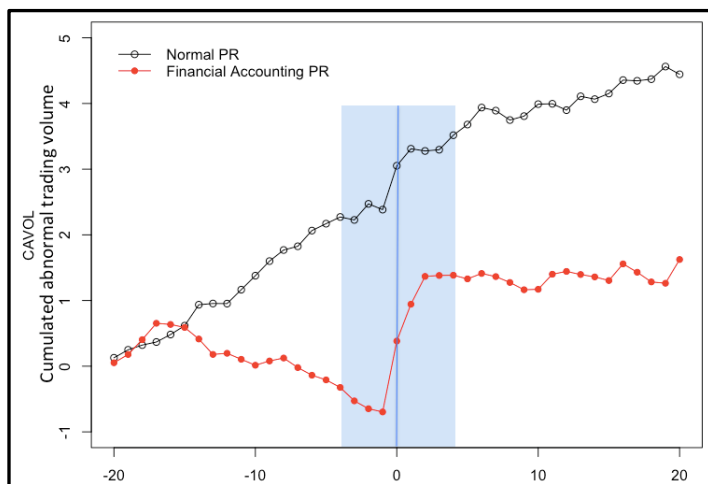
在这个直方图上显示了收集到的新闻稿的频率，为研究的每个季度分解。



这里有一个明确的模式，大多数新闻发布位于 2016 年。可能有一些观点认为，相比于旧新闻稿，研究人员能够以更高频率识别更多的新新闻稿。这可能是由数据收集程序所致。白条表示新闻稿的总发布频率。红色栏表示财务会计新闻稿。总的来说，财务会计新闻稿与正常新闻稿之间没有明显的时间区别。随着时间的推移似乎是可比的。第一季度和第二季度财务会计新闻发布的频率似乎有点高。这通常与年度财务报表新闻发布会一致，恰好属于上市公司的第二季度。

4 测试结果

这是新闻稿周围的平均异常交易量。



随之，研究人员计算了事件天数。事件日期是披露的实际新闻稿的日期，其围绕数字 0 在横轴上显示。零则是事件日期。然后在活动日期前 20 个交易日以及活动日期后的 20 个交易日结束。

垂直轴上是累计异常交易量（CAVOL），其以相对于平均交易量的公司交易量来衡量。基本直觉这张图是在正常新闻发布和财务会计新闻稿中分别在事件时间内分发异常交易活动的分布。

对于正常的新闻发布（空心圆圈的黑线），在事件发生时间似乎有异常的交易活动。特别是在事件发生之前，但在事件发生之前，这些累积的异常音量也会增加。如果没有任何事情发生，它应该在零附近（随着时间的推移略微增加），但是在零附近。在这里它随着时间的推移而增加，它也在零附近增加。

这表明，在正常的新闻发布会上似乎有一个过度的活动。这种传播活动似乎有一个零点附近的尖峰。但一般而言，对于正常的新闻稿，似乎在实际新闻出版之前还有相当大的交易活动。

相比之下，财务会计新闻稿在活动之前并未发现异常交易活动。而且在这个活动周围还有一个非常明显而且非常具有经济意义的交易活动 - 所以概念从活动开始前一天的大约两天前开始。因此，实际的交易活动确实集中在第 0 天，第 1 天和第 2 天。在这些 3 天的时间内再次使用并没有异常的交易活动。

累积异常体积测试结果

Sample CAVOL	Pre (-20;-1)	Event (0;2)	Post (3;20)	Total (-20;20)
No Event	0.751 (-0.911)	0.097 (-0.422)	0.698 (-0.771)	1.377 (-0.607)
All PR	1.360 (-0.236)	1.215*** (0.179)***	0.394 (-1.138)	3.424* (-0.103)
Normal PR	2.460 (0.129)	0.817 (-0.108)	0.446 (-1.093)	4.444 (-0.356)
Financial	-0.670**	1.961*	0.303	1.624
Accounting PR	(-0.746)	(0.876)*	(-1.420)	(0.633)

The cumulated abnormal volume (CAVOL) is based on firm-level daily share trading relative to the average firm-level daily trading over a 40 trading day period centered around the 40 trading day event window. The table reports sample arithmetic means above and medians below in brackets. Test results are based on Welch two sample t-tests for means and continuity corrected Wilcoxon rank sum tests for medians.
***/**/* indicates two-sided significance at the 1%/5%/10 % level, respectively.

该表格的前两行显示了一般新闻稿样本的测试结果，标记为 ALL PR，相对于 NO EVENT 控制窗口，没有特定事件的公司。PRE EVENT 数字的平均值通常较大。在实际事件或新闻发布公告前后，有一个非常重要且经济可行的非常规交易活动。为了解释这个数字 1.215，这个数字表明在这 3 天左右，异常交易活动只是正常交易日正常交易活动的 1.2 倍左右。所以这表明在这 3 天里这些公司往往会像一天多交易一样。这也翻译了 40 天的交易窗口。因此，在过去 40 天里，平均异常平均值为 3.4，表明在 40 天期间，它的额外交易日为 3.5 天。这意味着新闻再出租一般与市场活动异常或交易活动异常有关。换句话说，这些新闻稿产生流动性。这里感兴趣的数字以蓝色突出显示。

以红色突出显示的数字，这里显示的是，金融账户新闻稿与维度上的正常新闻稿不同。

这似乎是财务会计新闻稿在事件发生之前不会处理异常的交易活动。当涉及到事件时，财务会计新闻稿似乎与事件周围更大的异常交易活动有关。所以这一点通过 1.9 的这一指标表明，平均值表明，在财务会计新闻发布的周期内，触发更多异常的营业额比正常的新闻稿。

5 结论

以经济术语解释结果意味着，新闻发布与新闻发布课程交易意义上的异常市场活动有关。这并不令人意外，但仍然很重要的一点是，这种结果也与中小企业和跨国公司有关。

接下来的事情，特别是从财务会计和控制角度来看，新闻稿有交易效果，并且系统地采用新闻稿的类型。当有财务会计新闻稿时，

1. 首先：您没有在正常新闻发布中观察到的事件前交易活动。
2. 其次：实际的交易活动非常集中于活动时间。所以这意味着财务会计出版社的重新出售实际上是在很短时间内就交易活动直接联系起来的。

虽然这项研究是一项非常小规模的研究，但通过将这一结果与大规模研究进行比较，结果具有可比性。这是一项典型的研究，调查财务会计信息及其相对于其他信息来源对资本市场的影响。

看起来有趣的是，财务会计是众多信息来源中的一个，它具有与其他信息来源不同的特定属性，这也很有用。另外，非常有趣的是，这与德国和中国的中小企业和跨国公司相比都是有可比性的。

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Part 1 Framework conditions and macro-economic analysis

F 中国的一带一路倡议—中小企业的契机

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摘要

一带一路是中国在区域性基础投资方面的倡议，旨在贯穿亚洲、非洲和欧洲地区，开放新的贸易路线、市场和能源资源，像纽带一样连接起欧亚大陆的海上和陆地。亚欧非地区的 65 个国家参与这项倡议，代表了世界 62%的人口和世界 GDP 的 30%。一带一路的总投资数量约为 9000 亿美元。到 2030 年，仅亚太地区就有 23 万亿基础投资需求，不仅涉及大型公司，还包括中小企业，都能从中受益。中小企业主要作为大型公司的分包商参与一带一路倡议。然而，中小企业作为大型公司最终产品的中间投入供应商，能够间接地获取利益。

关键字：

一带一路倡议，中小企业，全球化

文献分类：

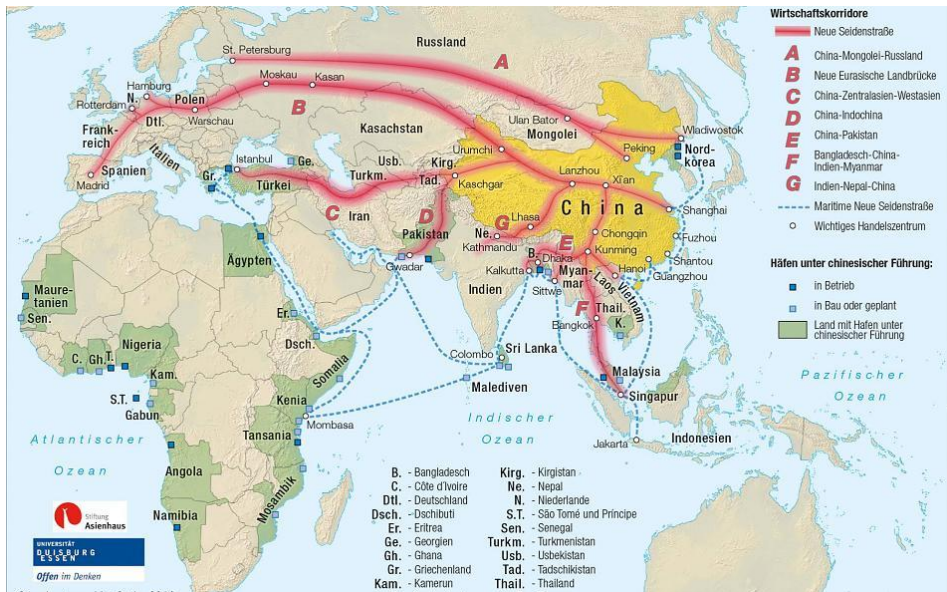
F23, F63, L25

1 一带一路——新丝绸之路

古代丝绸之路是一条长达 6400 公里的车队路线，经由中亚和东亚，连接了地中海各国。丝绸销往西部，羊毛、黄金和白银销往东部。然而，古丝绸之路不仅仅影响了贸易，也促进了思想交流。比如佛教就是通过这条线路从印度传入了中国。

新丝绸之路，也就是一带一路倡议（图一），是中国发起的基础设施投资项目，旨在开放亚非欧地区新的贸易路线、市场和能源资源，像纽带一样连接欧亚大陆的陆上和海上地区。它通过“丝绸之路经济带”和“21 世纪海上丝绸之路”，借助不同项目的合作连接了亚欧非地区 65 个国家。一带一路沿线国家的总投资量约为 9000 亿美元（普华永道公司，2017）

图 1：“丝绸之路经济带”和“21 世纪海上丝绸之路”（即一带一路）



来源：Stiftung Asienhaus 和杜伊斯堡·埃森大学（2016）

这项倡议旨在推动全球化和增加出口，促进中国对沿线地区的经济影响力，通过加强交通、能源和网络等基础设施的建设，以及国际贸易和文化交流，促进中国西北地区（新疆、宁夏、甘肃、陕西、内蒙古）、东北地区（黑龙江、吉林、辽宁）以及西南地区（广西、西藏、云南）和中国其它地区的发展。

2013年，习近平主席提出一带一路倡议，并在2016年将其纳入十三五规划中。表一说明了它是具有里程碑意义的举措。

表 1: 一带一路倡议的里程碑意义

年份	月份	意义
2013	9月	习近平主席首次提出丝绸之路经济带
	10月	习近平主席首次提出21世纪海上丝绸之路
2014	3-4月	习近平主席在访问欧洲时首次提出丝绸之路经济带（德国、比利时）
2015	3月	中国发布一带一路倡议行动计划
	6月	在北京亚洲基础设施投资银行（亚投行）签署协议
	9月	欧盟与中国同意中欧互联互通平台
	10月	习近平主席访问英国时提出一带一路倡议
2016	3月	一带一路写进十三五计划
	6月	习近平主席访问塞尔维亚和波兰时提出一带一路倡议
2017	5月	29位国家元首和来自130个国家的政府代表共同参加了在北京举行的一带一路国际合作高峰论坛

来源：欧洲智库网络-中国（2016），自有资源

2017年5月，29位国家元首和来自130个国家的政府代表参加了在京举行的“北京一带一路国际合作高峰论坛”。此次论坛共签署了约2750亿美元的商业合同。（表2）

表 2: 2017 年 5 月一带一路高峰论坛签署的国际协议

国家	谅解备忘录项目	美元 (10 亿)	中国企业	合作方
巴基斯坦	印度河沿线四项水力发电项目	50.0	-	-
巴基斯坦	迪阿莫-巴沙大坝	12.0	-	-
马来西亚	东海岸铁路二期工程	2.1	中国交建	马来亚铁路有限公司
菲律宾	普朗吉 V 250MW 水电站	10.0	中国能建	普朗吉水力公司
东帝汶	-	0.7	中国铁建 主要竞争者	东帝汶政府
孟加拉国	数码连接项目	0.7	中国铁建 主要竞争者	孟加拉共和国政府
俄罗斯	西欧与中国西部公路	80.0	中国交建	俄罗斯国家公路公司
哈萨克斯坦	阿斯塔纳轻轨二期工程	2.2	中国铁建 主要竞争者	阿斯塔纳当地政府
沙特阿拉伯	延布 5X660MW 燃油厂	4.0	中国电建	沙特海淡公司
沙特阿拉伯	能源项目	2.0	北方工业	-

塞尔维亚	贝尔格莱德工业园与公路	7.4	中国交建	塞尔维亚政府
塞尔维亚	两条公路	14.8	中国交建	塞尔维亚政府
埃塞俄比亚	交通工程	3.0	中国交建	埃塞俄比亚政府
埃塞俄比亚	大洼工业园区与公路	5.0	中国铁建	埃塞俄比亚政府
其它	-	80.0	-	-
总量 (美元)	-	274.0	-	-

来源：Chua（2017）中国交建=中国交通建设股份有限公司，中国铁建=中国铁建股份有限公司。

一带一路倡议总投资量约为 9000 亿美元。其中，中国的财政来源分别是：国家丝路基金（400 亿美元，2017），国家开发银行（370 亿美元，2017），以及中国进出口银行（200 亿美元，2017）。基础设施投资支持同时来自亚洲基础设施投资银行（亚投行），2016 年其投资额为 17 亿美元。

一带一路倡议计划基础设施投资重点在以下方面：

- 交通基础设施：公路，桥梁，海港，铁路等
- 能源基础设施：输油输气管道，跨境电网，水电投资，核能，风能，太阳能和其它新能源，促进能源资源站点的加工与转化合作，打造综合能源资源合作产业链。
- 信息基础设施：跨境光学与光纤网络，跨大陆海底光缆等。

基础设施投资还包含了总额为 460 亿美元的中巴走廊（港口设备、输油管道、公路），长达 3000 公里的中新高速公路以及中亚输气管道。

2 亚洲的基础设施投资需求

亚洲是世界发展最快的地区之一。它迅速的经济增长亟需交通、能源和信息基础设施上的大量投资。

根据亚洲开发银行（亚行，2017）数据，在 2016 至 2030 年间，亚太地区的基础设施投资需求高达 22.5 万亿美元（表 3），其中东亚地区占据 61.6%，约 13.7 万亿美元。大部分投资将会是在中国。

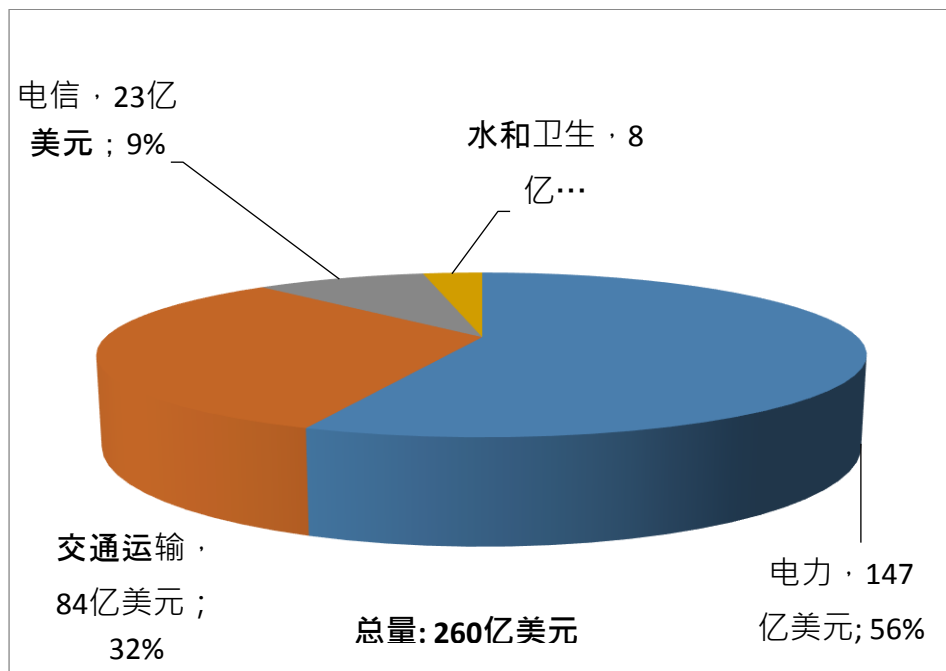
表 3: 亚太地区区域性基础设施投资需求（2016-2030，单位：十亿美元）

区域	投资需求	年投资需求	占 GDP 份额(%)
中亚	492	33	6.8
东亚	13,781	919	4.5
南亚	5,477	365	7.6
东南亚	2,759	184	5.0
太平洋地区	42	2,8	8.2
总 量 亚太地区	22,551	1,503	5.1

来源：（亚行，2017）

另一方面，亚太地区基础设施投资需求也非常多元化。根据亚洲开发银行（亚行，2017）数据，在 2016 年，发电需求量为 147 亿美元，交通需求量为 84 亿美元，电信需求量为 23 亿美元，水和卫生设施需求量为 8 亿美元（图 2）。

图 2: 亚太地区部门投资需求量 (2016, 单位: 十亿美元; 百分比)



来源: (亚行, 2017)

不仅是这些部门, 大型企业, 还包括中小企业都可以销售自己的产品, 提供服务。一些一带一路的投资将会进入欧盟成员国, 大部分投资都是在亚洲。在中欧互联互通平台的框架下, 一带一路倡议与欧盟的合作正如火如荼进行中。

3 一带一路倡议与欧盟的合作

中欧互联互通平台的目标是促进一带一路倡议与中欧互联互通倡议的协调（全欧交通网络政策），推动基础设施、设备、技术和标准方面的合作。基于中欧互联互通平台，最重要的领域为以下方面（公司电信报，2015）：

- 5G 移动技术的联合开发和推广，欧洲先进的数字基础设施与中国的合作，欧盟有 3150 亿英镑的全新投资计划，目标为 21 世纪战略基础设施。
- 增强智能城市、智能资源和物联网的合作。
- 建立高水平工作团队，确保欧洲公司在中国和中国公司在欧洲的实际的新机遇，涉及高科技创新、电子商务、在线服务、云服务和大数据。
- 建立大型投资融资和激励机制，聚焦中欧地区的高科技创业与协同创新。

4 一带一路项目为包括亚洲中小企业在内的国内外企业提供机遇

一带一路倡议将不仅给大型企业提供大量机会，同时也使亚洲中小企业从中受益。

表 4: 亚洲一带一路倡议计划中的项目和正在实施的项目（2017）

领域	计划中的项目和正在实施的项目
高速列车连接	<ul style="list-style-type: none"> • 欧亚铁路 • 中亚铁路 • 泛亚铁路
交通基础设施	<ul style="list-style-type: none"> • 提高印度铁路网 • 建设科伦坡港口
输油输气管道	<ul style="list-style-type: none"> • 中亚-中国天然气管道 D 线 • 西亚输气管道 III, IV und V 线 • 中国俄罗斯东线和西线天然气管道
电信与能源	<ul style="list-style-type: none"> • 光缆连接中国与缅甸，中国与塔吉克斯坦，中国与巴基斯坦 • 南洋海底光缆 • 中国俄罗斯输电网

来源：Chua（2017）

表 4 显示了亚洲一带一路倡议计划中的项目和正在实施的项目。大型项目计划在高速列车连接、交通基础设施、输油输气管道和电信与能源领域实施。

负责这些项目实施的部门是中国交建、中国铁建以及如西门子、美国通用电气公司和三菱这类的国际公司。中小企业也会以分包商的身份直接参与其中。一些中型企业在制造业中占据世界市场领导者地位，有能力获得大型项目。中小企业作为大型公司最终产品的中间投入供应商，能够间接地获取利益。一份详细的投入产出分析可以揭示这方面的定量结果，这可能是下一步的研究内容。

5 总结

新丝绸之路，也就是一带一路倡议（图一），是中国发起的基础设施投资项目，旨在开放亚非欧地区新的贸易路线、市场和能源资源，像纽带一样连接欧亚大陆的陆上和海上地区。亚欧非地区的 65 个国家参与这项倡议，代表了世界 62% 的人口和世界 GDP 的 30%。一带一路国家的总投资量约为 9000 亿美元。例如，一带一路项目包括了中巴经济走廊，长达 3000 公里的中新高速公路以及中亚输气管道。

在中国，各项目主要由国有银行提供资金。新成立的亚洲基础设施投资银行也支持了亚洲的基础设施项目。一带一路倡议的目标是通过运输、能源和网络基础设施项目推动欧亚和非洲的全球化。它也旨在确保在国际贸易中的政治稳定与和平，同时强调中国的国际领导地位。亚洲基础设施投资银行的成立就是为了达到这个目的。在中欧互联互通平台的框架下，一带一路倡议与欧盟的合作正在进行中。

到 2030 年，亚太地区的基础设施投资需求将达到 23 万亿美元，这会给大型企业带来销售机会，也会给中小企业带带去商机。中小企业主要作为大型公司的分包商参与一带一路倡议。然而，中小企业作为大型公司最终产品的中间投入供应商，能够间接地获取利益。

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Part 2 Sectoral Analysis

G 生态学视角下的食品产业集群企业关系

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摘要

随着食品产业集群的不断发展，集群中存在诸如同质化企业和产品泛滥，企业间缺乏有机联系和共生关系，资源枯竭和环境恶化等问题，这些问题引发了利基重叠和恶性竞争。本文以畜禽产业集群为研究对象，运用生态位理论分析企业生态位的包容性，重叠性和分离性

关键词

生态位理论;食品产业集群;竞争;合作

1 引言

食品产业集群由大量单位组成，这些单位位于特定的地理范围内，并以特定的方式聚集在邻近的社区周围，包括政府机构，中介组织和研究机构，生产食品及相关产品的中小企业产品和其他社会经济团体。在产业集群中，企业可以共享专业基础设施，劳动力市场和服务。这些单位之间的关系是复杂的，如互补，合作甚至是竞争。对于食品安全的重要性，中国政府十分重视食品工业的发展。“食品工业”十三五“规划”和“2017年第一档案”明确提出加快推进食品产业集群，促进食品工业集约化，规模化，形成合理布局，资源养护，现代食品产业集群。政府鼓励食品企业加强合作，积极向上游和下游延伸，从原材料从各个方面的生产到最终的整个产业链的建立。促进各方面的有效衔接，加快产业链整合之间的整合，实现优势互补，信息共享，协调发展。

在政府政策的指导下，中国大部分地方政府积极推动食品产业集群或食品园建设示范。山东莱阳食品工业园，重庆綦江食品工业园，滁州绿色食品工业园等多个大型，高水平的现代食品工业园区已建成。同时，部分地区在食品产业集群建设中贪婪，投资理念存在一些误区，导致产业集群内同质化企业过多，产品同质化严重。缺乏食品园内企业间的有机联系和共生关系，导致资源枯竭和产业环境恶化，造成利基重叠和恶性竞争等问题。特别是随着现代畜牧业生产技术的发展，畜牧，屠宰，加工和物流等方面正在逐步密集化，规模化。粪便排放和环境污染问题日益突出，已成为构建社会主义新农村，实现经济与环境协调发展的严峻挑战。在一些地区，食品产业集群出现了缺乏竞争和过度竞争并存的现象，导致产业集群竞争力和创新力严重不足，合作机制大大减弱。

因此，在食品产业集群发展和升级过程中，横向企业竞争过激，纵向企业间缺乏合作。在工业运作过程中，企业间竞争的地域性，不完全性和不平衡性与主体地位的不平等是食品产业集群发展中的关键问题。

食品产业集群是一个像生命一样的有机整体，具有从出现，发展，成熟，甚至衰退或其他演变的生活特征。所有这些行为不仅受到环境的影响或约束，而且对环境也有一些反馈。所以食品产业集群具有明显的生态特征。我们的研究是将食品产业集群视为一个天然的生物群落，利用生态位理论分析各个单位的生态位，从而使集群中的每个企业都能找到自己的位置，食物中的所有企业公园可以形成“食品工业生态社区”。我们将以食品工业园区的生命周期为研究对象，从其较低竞争的原始状态到过度竞争的中间状态，到最终的共存状态进行研究。我们将整合生态位理论，构建产业集群协同进化与可持续发展模式。

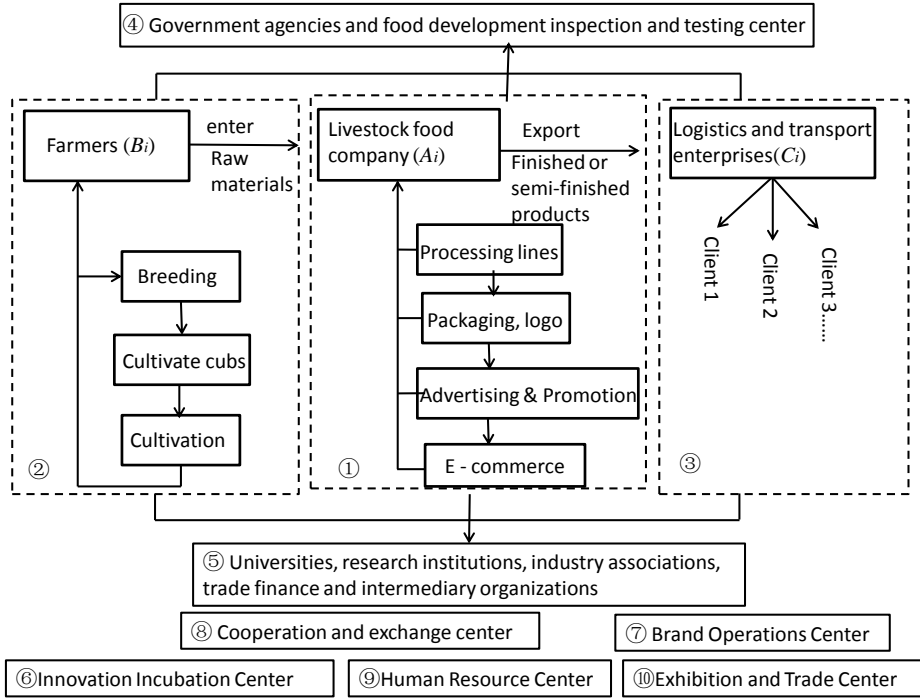
2 食品产业集群企业间的合作与竞争

由于竞争与合作发生在不同的范围和不同的参与者，他们可以共存于同一个产业集群中。因此，一个产业集群内企业之间适当的规模竞争既可以激励也可以避免过度竞争（Porter, 1998）。可以看出，对产业集群竞争与合作的观察是基于同构企业和异构企业的两种不同观点。

一个产业集群中领先的大型企业之间的竞争表明集群的影响最大，表现最为明显，特别是集群供应链企业。因此，领先的大型企业之间的竞争可以非常直观地反映出它们之间的激烈竞争，并且它与异质企业在相互合作的集群中进行密切合作。由于核心企业出现在产业集群中，特别是多核心企业共存，产业集群形成了以核心企业和大量协同企业共存并行组织驱动的集群供应链。

如图 1 所示，畜禽业是在特定地理范围内建立在邻近居民周围的群体，包括政府部门，中介组织，科研机构，大规模生产畜禽及相关产品的小型 and 中型企业中等企业的具体方式。本文的重点主要集中在畜牧业和食品产业集群的核心部分，如图中①，②，③部分所示。本文中的畜牧食品企业以 A_i ($i = 1, 2, \dots$) 表示。提供原料加工的农民或农业合作社以 B_i ($i = 1, 2, \dots$) 表示，物流和运输企业以 C_i ($i = 1, 2, \dots$) 表示。除此之外，政府机构和食品开发中心，检验和认证中心，检查产品的每个过程，国际知名的第三方检测和认证机构，开展国际检测和认证服务，大学，研究机构，协会，贸易金融和中介组织，为产业创新和企业融资提供支持 and 帮助，并在集群周围展示交易中心，创新孵化中心，品牌运营中心，合作交流中心，人力资源中心，提供技术和 service 支持，全部这些提到的单位由 D_i ($i = 1, 2, \dots$) 表示。

图 1: 家畜食品产业集群示意图



随着中国食品产业集群近几十年的不断发展，结合上述研究表明，在相对成熟的食品产业集群中，将有一个或多个核心企业带动集群内其他企业的发展。以下分析是针对畜禽产业集群有两个以上核心企业的情况。同时，由于畜牧饲料具有保鲜，耐用等特点，对物流运输行业的要求非常高。考虑到两者之间的相关性最高，主要以物流企业为例。

根据现有研究，畜牧业与食品集群的竞争可分为三类：①核心企业之间的竞争；②核心企业与相关企业之间的竞争；③相关企业（主要是中小企业）之间的竞争。相应的合作还可以分为三种：①核心企业之间的合作；②核心业务及相关业务合作；③相关企业（主要是指中小企业）的竞争。

图 2: 企业间的竞争与合作

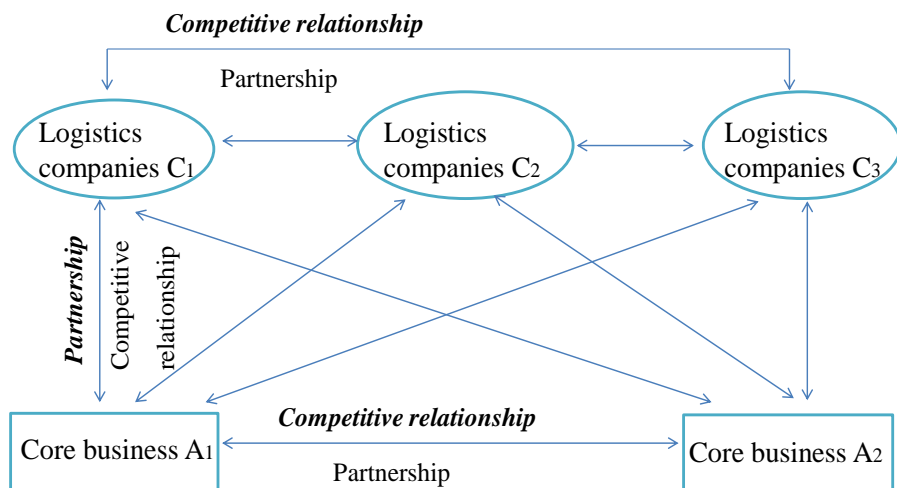


图 2 显示了各种企业之间的竞争与合作关系图，在一个畜禽产业集群中，核心企业 A1, A2, 物流企业 C1, C2, C3。可以看出，竞争与合作同时存在，但两者之间可能起主导作用（粗体字表示两种关系的主导作用）。

在食品产业集群中，企业之间的互动更加明显，并成为交错的网络结构。从图 2 可以很容易地看出，竞争主要由核心企业 A1 和 A2 以及企业 C1 和 C2（或 C1 和 C2, C2 和 C3, C3 和 C1）所主导。主要是由于地理距离紧密的产业集群核心产业之间，更广泛地获得其他信息渠道，传播更快的消息，基本上依靠同一地域市场，因此市场份额，产品类型，商业宣传，管理，企业的文化和以上比一般的竞争更具可比性。与此同时，两家不排除合作，如畜牧生鲜食品企业分享冷库，但这是少数情况下。但在合作方面，核心业务 A1 和物流企业 C1 等核心业务和相关企业之间明显存在明显差异。产业集群竞争与合作的主要关系可以概括为：同构企业的竞争大于合作的竞争，异质企业的合作大于竞争。

企业有必要充分发挥自身的核心竞争力，特别是大量资金和人力建设的核心竞争力，通过外包等手段从相关企业获得一些其他业务，使整个生产过程更加高效。这就是为什么核心业务和相关企业达成长期合作共识。但在实践中，并不是每个食物集群在竞争关系上都是一样的理论分析，仍然存在一些不容忽视的情况，尤其是明显的恶性竞争和缺乏竞争。

如图 2 所示，当企业 A1, A2 寻求物流合作时，如果一个食品集群中的核心公司缺乏竞争（核心业务处于低迷状态并且对相关业务的需求减少），则会导致物流企业 C1, C2, C3 处于过度竞争的状态。这是核心业务希望看到的。在这种情况下，它成为“核心商业市场”，意味着主导力量掌握在核心业务手中，而相关企业的过度竞争可以给核心业务 A1, A2 带来较低的交易成本，但不利于物流企业 C1, C2, C3 长期发展；如果核心业务 A1 和 A2 之间存在过度竞争（核心业务发展迅速，相关业务需求强劲），物流企业 C1, C2, C3 有更多机会观察 A1 和 A2 提供的合作条件，并选择最优化的合作。在这种情况下，它成为“相关的商业市场”，意味着主导权在相关企业手中。这种情况会给物流企业 C1, C2, C3 带来更多的收益，核心业务肯定会在不同程度上受到过度竞争的影响。

3 畜牧业食品产业集群中企业关系的生态位分析

生态位理论是现代生态学的一个重要理论概念。约翰逊（1910）是第一个使用“利基”这个词的人。接着格林内尔（1917），埃尔顿（1927），哈钦森（1957），奥德姆（1959），皮安卡（1983）等著名学者一直致力于小生境的分析与探索。生态位理论可以概括为三个要点：位置，功能和物种的关系。其中最关键的一点是，物种在每个物种的空间位置上得到稳定的适应。另外它也有其他物种的功能和接触。在研究过程中，学者给出了具体的数值指标，如生态位宽度，生态位重叠，生态位大小和生态位尺寸。

随着生态位理论在企业经济中的不断应用，一些国内学者已经形成了自己的生态位理论。企业生态位是企业在整个生态资源空间中可以获得和利用的资源和空间的组成部分。它是一个企业乃至一个产业，在企业生态环境中有一定的地位。行业内企业的利基是行业内企业竞争力的标志（梁家华，葛振中等，2002）。它是与其他企业有关联的企业的的市场地位，位置和功能状态（林晓，2003）。在企业市场中，某一市场环境下的企业占据一定的地位，起着与“市场导向”概念类似的作用。但它比“市场定位”更具生态内涵（徐芳，李建华，2005）。企业生态位是指企业在特定生态环境中一定时期内积极与环境及其他企业在互动过程中形成的相对地位和作用（严安，大庆里，2005）。

食品集群的利基可以被解释为不同类型的食品企业在集群中有自己的稳定位置。各企业的地位体现了其在行业内的综合实力。在日常生产中，食品企业在特定的集群生态环境中与相关企业保持密切联系，充分发挥其在集群中的重要作用，并相互作用。

通过参考国内外学者对生态位理论的研究并扩展其结果，我们可以用上述量化指标来描述抽象集群企业关系。这里主要集中在三个方面。首先，集群内企业之间的竞争可以表示为生态位重叠。其次，集群内企业之间的合作可以表示为利基的补偿。第三，集群内企业间的共生关系可以表示为中性理论的均衡（第三点将在下一节中进行分析）。

由于研究对象被定义为食品产业集群，因此企业利基的广度可以理解为食品企业市场资源的总需求。这间接反映了食品企业在竞争中的竞争水平。如果食品企业的资源更丰富，生态位更广，生态位更加普遍化，这意味着生态位重叠的可能性越大。相反，食品企业的生态位较窄，生态位较为专业化，表明生态位重叠的可能性较小。上述原理可以分为三种类型，如下所示。

图 3: 小生境类型的示意图

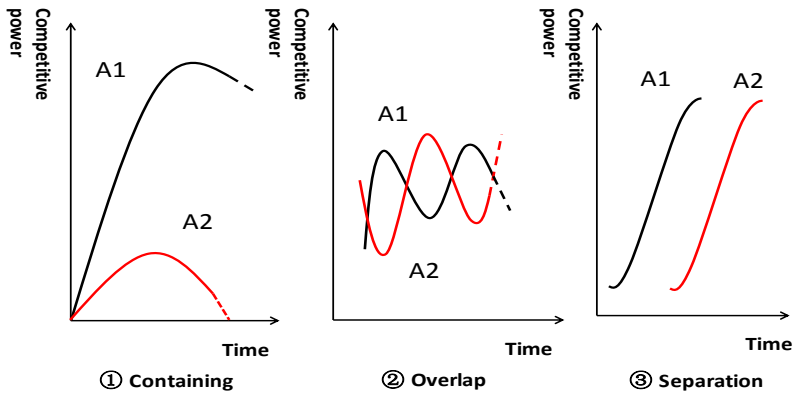


图 3 显示了畜牧业和食品业中的企业 A1 和 A2。以上三种类型分别表示不同特点。①含有：随着时间的推移，优胜劣汰，企业 A1 逐渐获得更高的竞争力，企业 A2 逐渐被淘汰。（这可以看作是重叠的特例，或者是由于企业 A2 缺乏竞争而间接造成的。）②重叠：这种情况表明企业之间存在竞争，企业 A1 和 A2 在竞争中交替上升。③分离：表明企业 A1 与 A2 之间存在合作或共生关系。两个生态位相互平行，增加和减少，并相互依赖。

但在实际情况下，不应忽视企业的环境因素，也应考虑相关对象。在这里，我们建立一个多维坐标进行分析。本文假设有三种主要的食品产业集群研究：第一类是物流企业，设 X 轴。其次是资源型农户，设置为 Y 轴。三是面向畜牧业的食品企业，它是以生产加工为主的食品企业，定位于 Z 轴。

图 4: 企业的二维生态位示意图

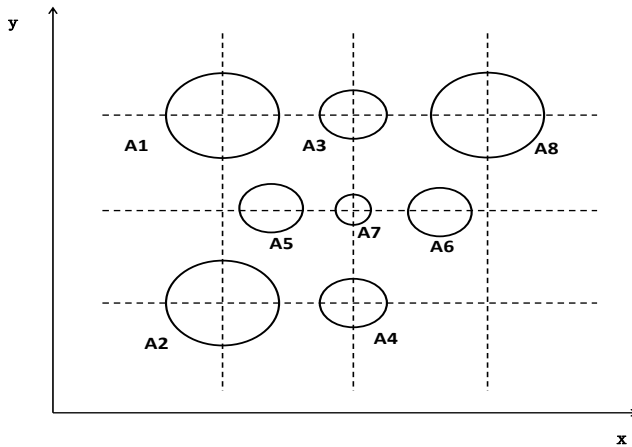
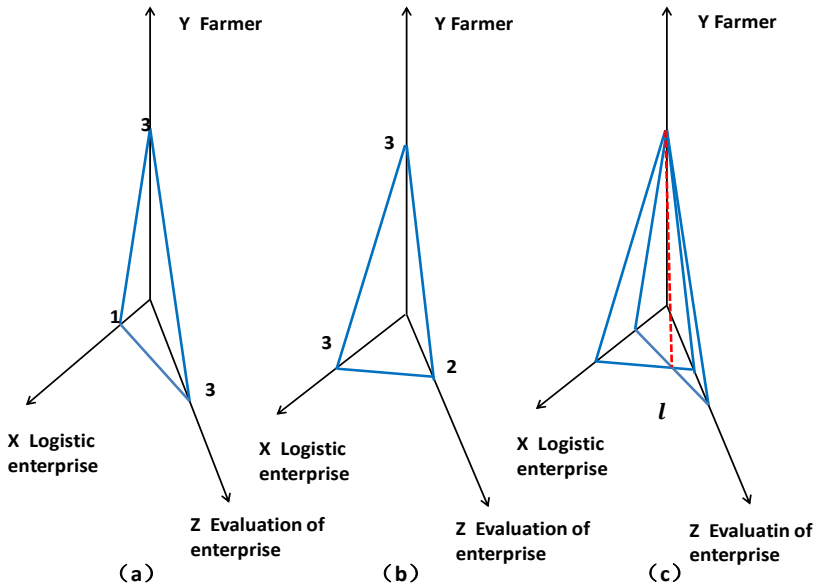


图 4 以不同相关对象的二维视角展示了家畜食品行业的利基。从上图可以看出，企业 A2, A4, 企业 A1, A3, A8, X 轴方向与企业 A5, A7, A6 具有相同的生态位。在 Y 轴方向，企业 A1 和 A2, 企业 A3, A7 和 A4 具有相同的生态位。也就是说，不同维度的生态位存在差异，所以我们不能忽视研究过程中相关对象的视角。为了更直观地反映生态位重叠现象，每个研究企业可以建立一个三维坐标。这里，例如，上图中的企业 A1 和 A2 构建了以下三维坐标。

图 5: 企业三维生态位



在图 3 中，企业 A1 和 A2 在 Y 轴上具有相同的位置，即农民的 A1 和 A2 是非常相似的供应商。A2 和 A1 之间必须有高度竞争。假定 X 轴上的 A1 是 1，A2 是 3，Z 轴代表企业自己的评估（当然，在 X 轴上，企业 A1 和 A2 具有不同的生态位，这种评估需要在对企业有深入了解后进行调整）。假定 A1 为 3，A2 为 2。企业 A1 和 A2 建立在 $\triangle 133$ 和 $\triangle 332$ 的三维空间中。如图 3-C 所示，将两个三角形放在同一坐标系中，在该线相交。

这说明轴线上的企业和其他企业相互交叉，线条和点越多，它与其他企业在利基中的重叠越多，利基越宽，企业越分散。相反，企业更专业化。同样，农民对企业的竞争力评估也会影响农民的竞争力，因为农民会希望与更有竞争力的企业合作。但与农民竞争的企业在物流企业中并不一定具有竞争力。因此，企业的竞争力也会导致其合作伙伴行业的竞争。

4 结论和讨论

在研究中假设食品产业集群是一个纵横交错的网络结构，集群内的企业是同质的，异质的或互补的，反映了集群内企业之间的竞争，合作和共生关系。

由于食品安全的特殊性要求，其从环境，原材料，协作，检验检疫机构到任何参与者的操作都非常严格，这就要求企业，农民和专业机构建立良好的关系。我们的研究将食品产业集群视为一个天然的生物社区，并使集群中的每个企业都能找到自己的位置，形成一个“生态社区”。研究目标是从生态学角度构建食品产业集群协同进化与可持续发展模型。

通过以上分析可以发现，在畜牧业食品产业集群中，位于利基州的同质企业重叠，将会出现向螺旋阶段激烈竞争转变，也是自然选择的结果。另外，随着竞争的发展，集群趋于平衡。在均衡过程中，同构企业之间竞争的抑制大于异质企业之间的竞争，即“齐性竞争与异质合作”的总体趋势。

当平衡状态到来时，聚类处于饱和状态。旧业务的消亡将被新业务所取代。企业之间的生态位差异也被淡化。每个企业都是集群中的同等个人。企业的速度和数量不会再发生变化。这就是我们所说的平衡 - 共生。

共生是一种合作关系中的特殊情况，与合作关系更密切。它可以简单地理解为共存。也就是说，共生企业是一种亲密的长期战略合作伙伴关系，相互依赖，相互依存，生态位重叠较低。企业利基的低重叠将避免集群企业之间的对抗，因为它们生产相同的产品并争夺相同的市场和来源。生态位利用资源互补或生态位分离可以促进企业寻求各自发展资源的关系。同时，一方的日常运作将降低企业的交易成本，提高生产经营效率。对于一个企业来说，拥有共生关系是件好事，但这并不好。一旦一方出现财务甚至破产等重大问题，对方一定会参与其中。随着企业越来越依赖对方，一旦共生对象破产，企业就会受到严重破坏甚至破产。

尽管竞争本身导致了合作，但我们并不想看到竞争是过度还是缺乏竞争。人们想要的是集群中的均衡发展，当市场本身无法发挥作用时，在政府干预的帮助下。因此，本研究的另一个主要目的是为政府层面提供一个可管理，可操作的政策建议系列。随后的研究将基于本文的理论框架，并将在各种畜牧业食品产业集群如鲜肉，冷冻肉，蛋类和牛奶中进行实证研究。

5 致谢

本文只是一份工作文件，我们只与研讨会的与会者分享我们的观点。我们的观点是生态学理论可以用于食品工业生态系统。但对于如何运用具体的理论，如中性理论和生态位理论需要更多的研究。我们对研讨会上的任何建议表示感谢，并且我们会更认真地修改这份工作文件，以便在国际期刊上发表。

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Part 2 Sectoral Analysis

H 德国合作银行（小型银行）与 Y 一代与 Z 一代的一种沟通新渠道

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摘要

银行正面临着当今市场中的主要挑战。它们必须应对好诸多方面的严峻挑战，否则只能破产。其中最大的挑战之一是低利率，这主要发生在欧洲，并且在德国尤甚。因为低利率，银行的财政流动性日渐紧缩。可以预见的是，根据这种情况政府必将做出提升措施，或数月内或数年内。然而与此同时，客户的举止与需求也在迅速变化。尤其是对于 Y 一代和 Z 一代的年轻客户来说，他们对银行的技术需求也在变化，这也是银行不得不上的一门功课。各银行应意识到不同群体客户的不同偏爱，并以一种符合潮流的方式去满足客户需求。

关键词：

Small Banks, Banks, Future, Generation Y, Generation Z, FinTech, Digitization

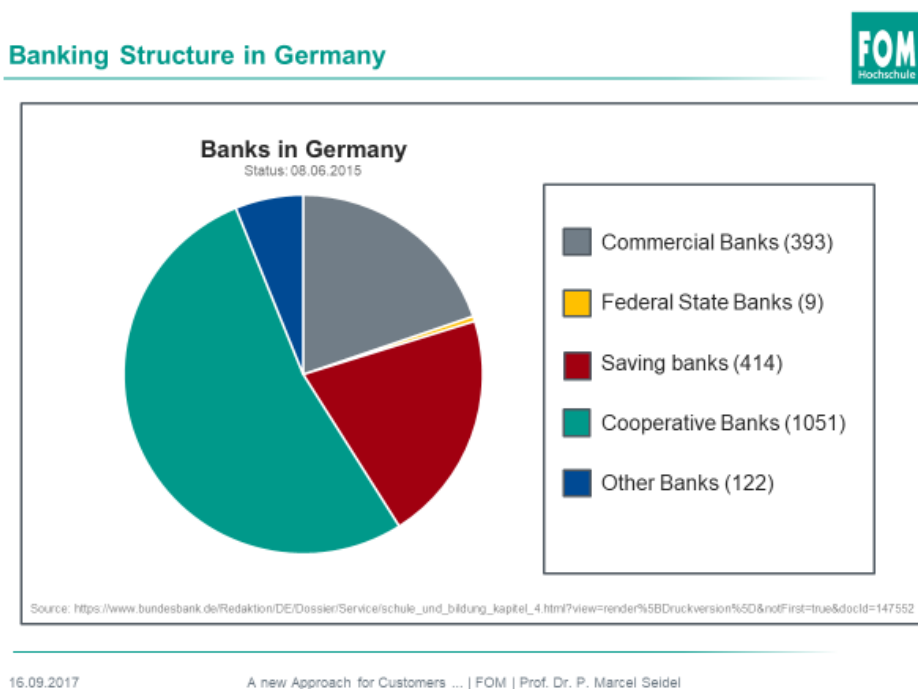
JEL-Classification:

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1 简介-德国的银行业市场

从许多年前至今，在德国一直存在着三种类型的银行部门：合作银行，储蓄银行和大型银行。然而除此之外，德国还存在着特殊的金融机构，它们无论是广义还是狭义上都可等同于银行。其中包括特别银行（如德国复兴信贷银行），非银行公众或类银行（如汽车银行）还有因特网银行（如 Auxmoney 与 Smava 公司），不过它们不会在国家官方数据中实际体现出来。

图 1: 德国银行业结构



信息源：德意志联邦银行（2017）-2015 德国银行业市场

合作银行在数量上是最大的银行集团，这点令人惊讶。仔细看看这个行业的一些关键数据，便可知合作银行的重要性。然而，2017 年目前的数字显示，合作银行的数量正在迅速下降 - 从 2015 年的 1051 个增至 2017 年的 972 个。根据 2017

年的数据，所有合作银行总额均达到 8,710 亿欧元。这些银行共雇用 151,050 名员工，在德国拥有 1840 万名客户。

图 2: 德国的合作银行

Cooperative Banks in Germany



972 banks belong to the Cooperative Bank Sector.



18.4 million Members trust the Cooperative Banks.



851 billion euros is the balance sheet total of Cooperative Banks.



151,050 employees work for the Cooperative Banks.

Source: https://www.bvr.de/Presse/Zahlen_Daten_Fakten

信息源：BVR-联邦信用合作社和合作银行

2 银行（尤其是小型银行）市场巨变的原因

2.1 技术层面

银行日益恶化的一个主要原因毋庸置疑是过去几年的低利率。对许多银行来说，为应对这种情况，制定正确的战略方向及其重要。

合作银行的客户结构反映了德国社会的结构。就 Y 一代和 Z 一代的客户来说，银行所面临的第一个挑战便是如何与他们沟通，并知晓他们的喜好特点。

在我看来，数字化或处理数字化、社交媒体是未来银行业面临的巨大挑战。通过分析世界各地使用数字技术和社交媒体的数据，我们发现它们的分布特点令人印象极为深刻（图 3）。将德国的数字技术使用情况与中国的使用情况相比可知，这一发展如今仅是刚刚起步（图 4）。

图 3: 全球数字数据写照



信

息源：社交媒体机构（2017）

通过仔细分析顾客的实际行为，可以表明：

- 每秒都会有一位银行客户通过线上途径转账。
- 在柜台进行的转账量占总数的 1/3。
- 十分之七的人在重要事务上不会联系银行顾问。

图 4: 德国与中国的数字写照



信息源：社交媒体机构（2017）

由这些数字我们能预测，当客户特别是属于 Y 一代和 Z 一代的客户在与银行打交道时，其习惯会不断变化。重要的是，金融科技市场的数字产品发展已经非常先进，新的金融科技公司每天都在诞生。

不幸的是，它让人们认为传统银行部分低估了金融科技公司蓬勃发展所带来的威胁，以及他们对传统银行的取代能力 - 下面的例子显示了其低估的程度：

- **Lufax**

这家最大的金融科技公司市值达 100 亿美元，远胜其他公司（哪三家公司？）。迄今为止，Lufax 提供了 20 万笔贷款，总额为 25 亿美元。随着大量新资本的涌入，Lufax 首席执行官 Gregory D. Gibb 立志将 Lufax 发展成为中国市场上的主导平台。

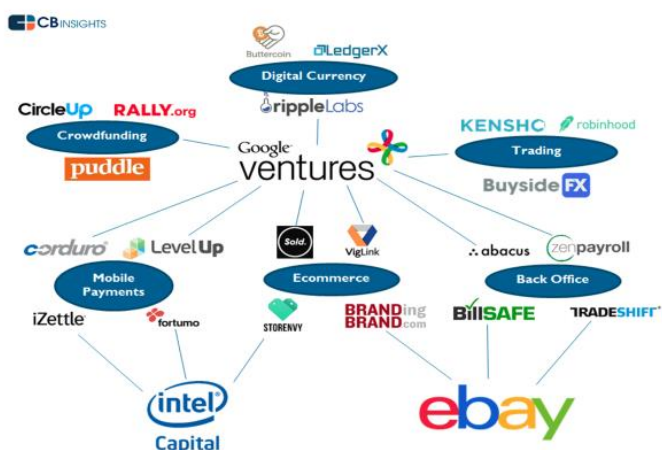
- **Lending Club**

由于受银行愈发严格的贷款政策刺激，Lending Club 正迅猛发展。自 2007 年成立以来，美国公司已经提供了超过 60 亿美元的贷款。2014 年，Lending Club 正式上市。目前，该公司市值 65 亿美元，因而排在第二位（属于哪一类）。

- **Square**

自 2013 年以来，Square 一直提供基于 iPad 的结账系统以及 Square Stand 服务。现在，它也正在开发基于 Android 系统的替代产品。Twitter 联合创始人 Jack Dorsey 是 Square 的老板，该公司的市值为 60 亿美元，是该类型中规模最大的金融科技公司。

图 5: 与硅谷巨头间的合作



信息源：CB insights（2017）

即使是金融科技公司也被低估的银行与金融科技公司合作。这里有来自合作银行的一些例子（信息源：Payment and Banking（2017））：

- Volksbanken: Startnext, fin, lendstar, id now
- Sparda Bank: Schutzklick, lendstar, gini, web id solutions
- PSD Banken: id now, fin, dwins
- Südwetbank: Fintura
- Berliner VB: Schutzklick, Bergfürst
- GLS Bank: id now, crowddesk, better pay
- APO Bank: Fintura
- Teambank: Figo

金融科技公司与硅谷巨头们一起合作。其实，他们正是巨头们的一部分。Kabbage（kabbage.com）就是一个很好的例子，它是 Amazon 为小型企业提供自有贷款服务的公司，自 2017 年开放以来，该公司已经提供了约 30 亿美元的贷款。

图 5 显示了金融科技与谷歌和易趣等一些巨头之间的合作关系网概况。

因此自技术层面得出的结论是：技术挑战正来势汹汹！

2.2 Y 一代与 Z 一代

Y 一代是第一代伴随着电脑和互联网长大的人（他们出生于 1981 年和 1994 年之间）。它们与 X 一代不同。2015 年，Y 一代在工作人口中的比例为 30%。2020 年，Y 一代将提供全球劳动力的 50%。因此对于银行来说，他们也是极为重要的一代人。这里有一些关于 Y 一代人的特点：

- 在线冲浪是他们休闲的首选。
- 许多人并不信任公司，媒体和银行的宣传。
- 熟知那些宣传生动，定位现代的独特的主流品牌。
- 积极参与社会生活，并融入大环境。
- 他们被认为是充满智慧，充满点子的一代，但也像其他几代人一样不够耐心，不够可靠。

当你观察 Z 一代时，你能更为直观地感受到他们对科技的喜爱。它们出生于完全数字化时期（诞生于 1995 年至 2012 年）。据说 Z 一代：

- 也被称为“连接沟通的一代”或“.com 之子”
- 两个人中会有一个将会拥有大学学位
- 到 2025 年，他们将占总劳动力的 27%
- 预计一生将会从事 17 个工作，5 个职业，并更换 15 次住所
- □ 全球的 Z 一代人口将达 20 亿

They live in the world of digitisation. What this means are illustrated in the example of Snapchat in figure 6. This leads to the conclusion Number 2: They are different!

图 6: Snapchat 的一些惊艳数据



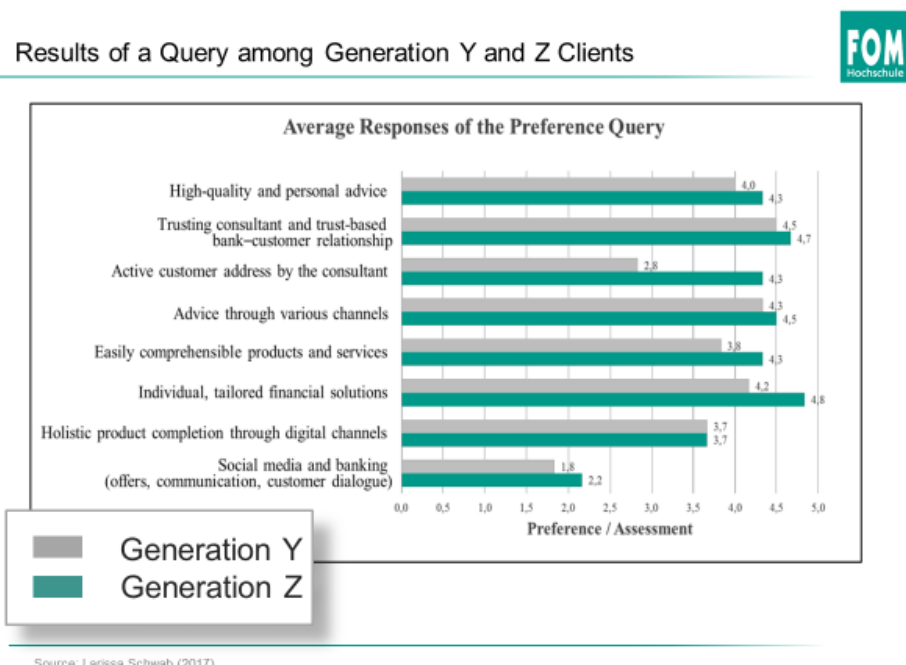
信息源: Expandedramblings (2017)

3 针对 Y 一代与 Z 一代客户的公司策略导向

为了满足 Y 一代和 Z 一代客户的需要，银行必须采取新的公司策略导向。随着年轻一代在线银行业务越来越多，传统的银行业即将退出历史舞台。

从前，拥有最佳分支机构的银行是市场的主宰，他们占据着巨大的市场的份额。但是，未来的银行业务将会改变。到 2020 年，所有银行都将以更为简单直接的方式来提供业务服务，而分行银行业务将迅速地转变其角色。银行将以综合方式充分利用所有渠道，来提供随时随地的贷款服务。他们将重新研究新一代客户所青睐的城市地点，引入新的分支机构形式，并通过第三方合作关系拓展实体网点，以提升销售并降低成本。随着交易和销售转向数字渠道，不能创造附加价值的分支机构将需要关闭或进行转型（King,B.（2013））。

图 7: 针对 Y 一代与 Z 一代客户的调查结果



信息源：Schwab, L. (2017)

最后从结果可知，银行必须要采取两个必要步骤：

- 全面整合所有提供服务和咨询的分配渠道，以提供随时随地的服务。
- 在第三方提供商的支持下，以新的形式来设立网点，并改进网点的功能与装修形式。

图 7 的研究者 Larissa Schwab 仔细研究分析了 Y 一代和 Z 一代参与银行服务中的行为特点。图 7 显示了这组针对新一代客户的调查结果。根据她的研究结果，可以得出以下的建议（Schwab, L.（2017））：

- 努力建成全渠道银行业务，以使客户从中受益
- 建立坐落于市中心、且于周六开放的咨询中心
- 设计符合现代生活的银行产品，并开发新型实用的客户端应用程序
- 将银行产品完成的流程数字化
- 谨记数据安全为重中之重
- 重视分支银行网点装修设计与外观，以营造使客户更为愉快的氛围
- 建立“体验银行”
- 形成一种严谨具体，积极向上的银行形象
- 更加关注客户的需求
- 在社交媒体上发布广告

4 措施

如果一家银行决定遵循这些建议，那便意味着它将走上与传统银行业截然不同的道路。未来的银行业应该更加开放，更加透明，也更加贴近客户。银行唯有改变方能成功，但是做出改变并不容易。一个大问题是银行往往不认识到需要改变。Brett King 深知其原因（King, B. (2014)）：“其问题在于描述真实空间的个人互动，咨询可用性和心理舒适等价值观的人是婴儿潮一代或一代人的一部分 X，从而描述他们对便利和购买行为的看法。”

因此，银行需要一种与以往不同的渠道，以及一种不同的视角来审视未来影响因素。遵循“战略 - 结构 - 文化 - 技术”四步走的传统思维早已改变。如今正确的步骤，应是“技术 - 文化 - 战略 - 结构”。

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Part 2 Sectoral Analysis

I 基于 AHP-TOPSIS 与障碍度模型的国家农业科技园区创新能力评价与制约因素研究 ---华东地区 42 家园区的调查数据

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摘要

本文基于国家农业科技园区的创新过程和战略定位,提出了一个包括创新投入、创新支撑、创新产出、集成示范和创新绩效五个一级指标的创新能力综合评价体系。并依据华东地区六省市 42 个国家农业科技园区的调查数据,利用 AHP-TOPSIS 模型对华东地区国家农业科技园区的综合创新能力及其一级分项指标进行了评价和排名。在此基础上,以五个创新能力一级指标为特征变量,采用 K 均值聚类的方法将 42 个园区划分为创新引领区、创新示范区和创新稳健区三个类别。并使用障碍度模型分析了不同类别园区的关键制约因素,给出了三类园区创新能力改善的针对性建议,为国家农业科技园区创新能力建设提供了理论参考依据。

关键词

国家农业科技园区; 创新能力; 制约因素; AHP-TOPSIS 模型; 障碍度模型;

1 引言

2000年,根据党中央、国务院的部署,科技部会同农业部、水利部、国家林业局、中国科学院和中国农业银行,启动了国家农业科技园区建设工作,自此,我国各省市的国家农业科技园区不断建立,园区数量迅速增加。截止2016年底,全国已经建成国家农业科技园区246家。国家农业科技园区已经发展成为我国农业科技成果集成转化的前沿阵地,农业科技型企业孵化培育的成长摇篮,一二三产业融合发展的对接平台,农业农村科技创新创业的培育基地,促进农民增收就业的重要渠道,推进农业供给侧结构性改革的强力引擎,农业科技园区的建设已经成为国家“创新驱动发展战略”的重要组成部分。因此,通过对国家农业科技园区创新能力的综合评价,能够发现其创新发展中的关键制约因素,从而采取针对性的措施有效提升园区的综合创新能力,带动区域农业的转型升级,具有重要的理论和现实意义。

2 农业科技园区创新能力的研究进展

1985年,美国学者罗杰斯和拉森针对美国西部“硅谷”的集聚效应进行了研究,为科技园区的综合评价奠定了基础,此后,鲁格和高德斯两位学者在《科学园区里的技术》一书中从研发基地、科研机构、园区环境、设施服务和科学领导五个方面提出科技园区成功的因素,形成了初步的科技园区综合评价的理论框架。近几年,伴随着我国传统农业的转型升级和创新驱动战略的实施,对于农业科技园区创新能力的研究逐渐成为学术界的研究热点,许越先从集成创新理论的视角研究了农业科技园区的发展问题,其分析了农业科技园区集成创新平台的整体功能和外部环境,并且对农业科技园区集成创新类型进行了划分,最后从增强集成创新意识、提高园区集成创新的总体规划设计能力、提升园区集成创新的组织能力和为园区集成创新营造良好的内部环境和外部环境四个方面给出了加强农业科技园区集成创新能力建设的建议[1]。杨敬华和蒋和平基于集成创新理论研究了农业科技园区农业产业的链式发展模式,认为农业科技园区产业链具有超区域性,应该依托当地的资源优势 and 区位条件,其演进应以规划引导为主,自发形成为辅[2]。杨敬华对于农业科技园区创新能力建设的研究中提出,园区的创新内容包括主体和客体的创新,需要从创新资源投入、技术开发与技术孵化以及技术创新扩散示范三个方面建设农业科技园区的创新能力[3]。周立军对现代农业科技园区的创新能力来源进行分析,认为知识、学习和社会资本在园区的创新能力来源中起着关键性作用,其中,知识聚合是现代农业科技园区成员之间的一种知识资源的优势互补,知识的聚合使参与者形成了解决新问题的力量,进而提高了创新能力;组织间学习加速了农业科技园区中知识的流动和集成,知识在园区内的快速扩散和新思想的迅速采用,使农业科技园区内部的合作更紧密,更能发挥园区的技术创新功能,从而推动现代农业科技园区的层次和创新能力的提高。园区社会资本的相互信任、互惠准则等特性为园区合作创新提供了条件,起到合作创新的重要“胶合剂”作用,它能够使合作关系运行通畅,让所有参与的行为主体都从中获益[4]。潘启龙和刘合光从基础建设和园区规模、区位优势和市场环境、产业链条和企业发展、科技创新和人力资本等6个方面构建了现代农业科技园区竞争力评价指标体系,并利用层次分析法确定了各项指标的权重,指出该指标体系可用于科技园区认定、企业发展应用和园区横向比较方面[5]。郑宝华、王志华和刘晓秋利用结构方程模型研究农业科技园区所处的区域外部环境对园区创新绩效的影响,研究表明农业科技园区创新环境的四个方面,基础设施环境、政策环境、市场环境和金融环境能够对园区创新绩效产生直接影响,并且能够通过创新能力进而对创新绩效产生间接影响[6]。刘丽红和李瑾从创新水平、创新支撑与创新绩效3个方面

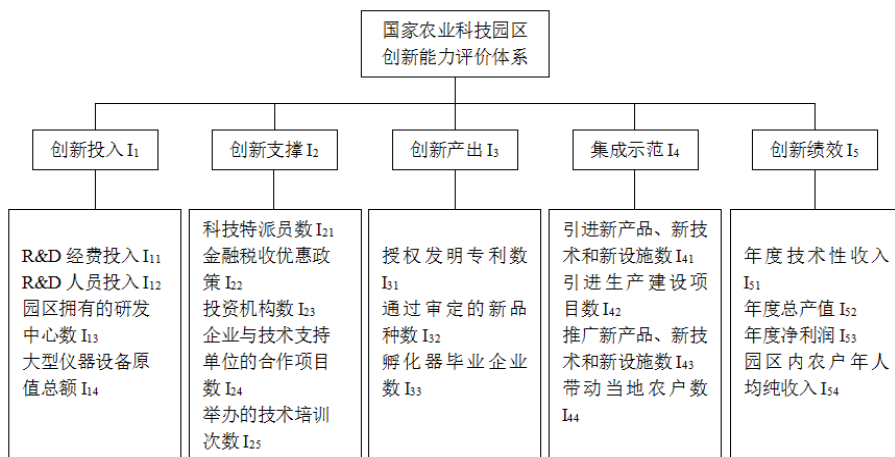
形成了针对农业科技园区创新能力的评价指标体系，并运用专家意见法和层次分析法对各级指标进行了赋权，从而形成农业科技园区创新能力评价模型[7]。

目前对于国家农业科技园区创新能力的研究，主要以理论探究和个别园区的案例分析为主，缺乏针对较大样本园区创新能力的实证分析，这使得园区的对于自身的创新能力建设状况和定为确定认知，创新能力的改善缺少科学依据，本文通过构建一套科学全面的创新能力评价体系，利用量化分析的方法对园区的创新能力进行准确的评价，并发掘其创新能力的关键制约因素，从而给出针对性的建议。

3 基于 AHP-TOPSIS 模型的国家农业科技园区创新能力评价

本文基于国家农业科技园区创新过程观的视角，即从创新资源投入→创新成果产出→成果的市场转化的过程，同时考虑到环境因素在创新能力建设中的重要作用以及国家农业科技园区“孵化、示范、辐射、带动、聚焦”的战略定位[8]，提出包括创新投入、创新支撑、创新产出、集成示范和创新绩效 5 个一级指标和 20 个二级指标的国家农业科技园区的创新能力评价体系。其中创新投入反映园区的创新资源投入状况，是创新能力形成的物质基础，具体包括园区的 R&D 经费投入、园区 R&D 人员投入、园区拥有的研发中心数和大型仪器设备原值总额四个二级指标。创新支撑反映驱动和支撑园区创新发展和创新能力形成的各环境因素状况，包括科技特派员数、金融税收优惠政策、投资机构数、企业与技术支持单位的合作项目数和举办的技术培训次数五个二级指标。创新产出反映园区创新创业成果的产出状况，是园区创新能力的物化成果体现，具体包括授权发明专利数、通过审定的新品种数和孵化器毕业企业数三个二级指标。集成示范反映园区技术引进、示范推广和辐射带动能力，包括引进新产品、新技术和新设施数、引进生产建设项目数、推广新产品、新技术和新设施数以及带动当地农户数四个二级指标。创新绩效反映园区的创新成果转化形成的经济效益以及带动农民脱贫增收的社会效益情况，包括园区的年度技术性收入、年度总产值、年度净利润和园区内农户年人均纯收入四个二级指标。国家农业科技园区创新能力评价体系框架，如图 1 所示。

图 1: 国家农业科技园区创新能力评价体系



基于国家农业科技园区创新能力评价体系, 根据课题组负责的“国家农业科技园区创新能力监测与评价 2016”工作中各园区 2015 年相关调查数据□, 以华东六个省市(不包括台湾地区)的 42 家国家农业科技园区为评价对象, 利用 AHP-TOPSIS 的方法对华东地区 42 家国家农业科技园区的创新能力进行评价□。AHP 即层次分析法用于确定各指标的权重, 通过 AHP 方法可以将专家打分转化为客观的权重分数。TOPSIS 分析方法是选取一个正理想点和一个负理想点, 通过比较被评价对象与正理想点、负理想点的距离, 选择较优的被评价对象, 计算距离的方法通常采用欧式距离法。TOPSIS 分析法目前被广泛的用于经济管理领域的评价研究中 [9]-[12]。AHP-TOPSIS 方法能够最大限度地减少人为因素的影响, 解决了评价过程中的不确定性问题, 保证了评价结果的真实可靠。研究模型的计算步骤如下:

1 数据标准化处理:

通过数据标准化去除指标数据的量纲, 包括正向和逆向的标准化, 公式 (1) 和 (2) 如下:

$$\text{正向标准化: } x_{ij}^* = \frac{x_{ij} - m_j}{M_j - m_j} (i = 1, 2, \dots, n; j = 1, 2, \dots, m); \quad (1)$$

$$\text{逆向标准化: } x_{ij}^* = \frac{M_j - x_{ij}}{M_j - m_j} (i = 1, 2, \dots, n; j = 1, 2, \dots, m); \quad (2)$$

上式中, x_{ij}^* 为指标标准化值; x_{ij} 为指标原始值; M_j 和 m_j 分别表示该指标在时期内原始数值中的最大值和最小值。经过指标标准化后, 构建决策矩阵 B 。

2 指标权重确定。

本文通过层次分析法即 AHP 的方法确定指标的权重 W_j , 在相关专家建议给出的判断矩阵基础上, 利用 Super Decision 求出各指标的权重值。具体如下表 1 所示。

表 1: 园区创新能力评价指标权重

一级指标权重	二级指标权重	一级指标权重	二级指标权重
创新投入 I_1 0.225	年度R&D经费投入 I_{11} 0.066	创新产出 I_3 0.198	授权发明专利 I_{31} 0.082
	年度R&D人员投入 I_{12} 0.066		当年通过审定的新品种 I_{32} 0.065
	研发中心数量 I_{13} 0.051		年度孵化器毕业企业数 I_{33} 0.051
	园区大型仪器设备原值总额 I_{14} 0.042	集成示范 I_4 0.184	引进的新产品、新技术和新设施 I_{41} 0.054
创新支撑 I_2 0.150	科技特派员数量 I_{21} 0.037		引进的生产建设项目 I_{42} 0.035
	金融财政优惠政策 I_{22} 0.035		推广的新产品、新技术和新设施 I_{43} 0.054
	投资机构数 I_{23} 0.029		带动当地农户数 I_{44} 0.041
企业与技术支持单位之间的合作项目数 I_{24} 0.027	创新绩效 I_5 0.243	年度技术性收入 I_{51} 0.074	
企业本年度举办的技术培训次数 I_{25} 0.022		年度总产值 I_{52} 0.055	
		年度净利润 I_{53} 0.062	
			园区内农户年人均纯收入 I_{54} 0.052

3 构建规范加权决策矩阵

根据各指标权重，建立规范加权决策矩阵，公式（3）所示：

$$V = B \times W = \begin{bmatrix} v_{11} & v_{12} & \cdots & v_{1j} \\ v_{21} & v_{22} & \cdots & v_{2j} \\ \vdots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & \cdots & v_{ij} \end{bmatrix} \quad (3)$$

4 确定被评价对象的正理想点和负理想点。设 y_j^+ 是第 j 个指标值的最大值， y_j^- 是第 j 个指标值的最小值，公式（4）和（5）所示：

$$y_j^+ = \max_{1 \leq i \leq n} (y_{ij}) \quad (4)$$

$$y_j^- = \min_{1 \leq i \leq n} (y_{ij}) \quad (5)$$

5 由公式（4）和（5）即得到被评价系统的正理想点 $y^+ = (y_1^+, y_2^+, \cdots, y_m^+)$ ，负理想点 $y^- = (y_1^-, y_2^-, \cdots, y_m^-)$ 。

6 计算被评价对象与理想点之间的欧式距离。设 d_i^+ 是第 i 个被评价对象与正理想点的欧式距离， d_i^- 是第 i 个被评价对象与负理想点的欧式距离，则如公式（6）和公式（7）：

$$d_i^+ = \sqrt{\sum_{j=1}^m (y_j^+ - y_{ij})^2} \quad (6)$$

$$d_i^- = \sqrt{\sum_{j=1}^m (y_j^- - y_{ij})^2} \quad (7)$$

7 计算相对贴近度并按顺序排名。

设 c_i 为第 i 个被评价对象指标值与理想点的相对贴近度，如公式（8）所示。

$$c_i = \frac{d_i^-}{(d_i^- + d_i^+)}, i = 1, 2, \cdots, n \quad (8)$$

公式 值越大，表明第 i 个被评价对象与负理想点的距离越远，即第 i 个被评价对象越优秀，具体到本文就是第 i 个国家农业科技园区的创新能力越强。依据《国家农业科技园区创新能力监测数据 2016》的华东地区 42 个国家农业科技园区的创新能力评价指标数据，利用 AHP-TOPSIS 模型求得的其相对贴近度即为各园区的创新能力综合得分，并按照数值大小进行排序，如表 2 所示。除了创新能力综合得分之外，本文还对创新能力的五个一级指标利用 AHP-TOPSIS 方法计算了其相对贴近度，具体见表 2。

表 2: 园区创新能力综合评价得分表

综合排名	园区名称	创新能力综合得分	创新投入得分	创新支撑得分	创新产出得分	集成示范得分	创新绩效得分
1	济宁园区	0.5288	0.6093	0.4017	0.4336	0.4757	0.6675
2	淮安园区	0.4264	0.1858	0.5017	0.5721	0.5684	0.2580
3	徐州园区	0.3771	0.2777	0.3321	0.5592	0.2249	0.3963
4	泰安园区	0.3498	0.3175	0.1679	0.6338	0.1909	0.2333
5	泉州园区	0.3476	0.2575	0.3186	0.4403	0.1858	0.4235
6	泰州园区	0.3342	0.2637	0.4767	0.4458	0.2369	0.1976
7	白马园区	0.3183	0.2090	0.2861	0.5377	0.1554	0.2481
8	丰城园区	0.3044	0.2388	0.1621	0.3311	0.0937	0.4430
9	浦东园区	0.3020	0.1952	0.3518	0.3614	0.3116	0.2795
10	南通园区	0.3015	0.2397	0.4410	0.2683	0.3256	0.2358
11	即墨园区	0.2972	0.2356	0.2801	0.4255	0.1826	0.2861
12	井冈山园区	0.2955	0.4103	0.3052	0.2669	0.1528	0.2434
13	德州园区	0.2818	0.2808	0.2285	0.3651	0.1615	0.2935
14	常熟园区	0.2811	0.1530	0.3991	0.1032	0.3632	0.2801
15	连云港园区	0.2800	0.1530	0.2458	0.2908	0.1684	0.3982
16	南昌园区	0.2795	0.1580	0.2488	0.3873	0.1613	0.3236
17	滨州园区	0.2699	0.1587	0.3025	0.2825	0.1969	0.3420
18	寿光园区	0.2668	0.1049	0.2377	0.2847	0.1946	0.3725
19	淮北园区	0.2666	0.2629	0.2152	0.2567	0.1201	0.3542
20	漳州园区	0.2546	0.1737	0.3123	0.3723	0.1302	0.1973
21	马鞍山园区	0.2498	0.1274	0.3028	0.2591	0.1652	0.3162
22	萧山园区	0.2406	0.1697	0.2545	0.3147	0.1783	0.2479
23	盐城园区	0.2133	0.1652	0.2614	0.1987	0.1678	0.2516
24	东营园区	0.2124	0.1687	0.1628	0.3160	0.1347	0.1999
25	烟台园区	0.2085	0.1937	0.2130	0.2259	0.1836	0.2203
26	宿州园区	0.2050	0.1660	0.1587	0.2127	0.1276	0.2776

27	崇明园区	0.1993	0.1039	0.3344	0.2039	0.0885	0.1805
28	金华园区	0.1941	0.1457	0.2940	0.2237	0.1474	0.1354
29	湖州园区	0.1864	0.1401	0.2503	0.2118	0.0981	0.1953
30	蚌埠园区	0.1827	0.1322	0.1438	0.1881	0.2392	0.1841
31	临沂园区	0.1813	0.0743	0.2200	0.2118	0.0766	0.2290
32	上饶园区	0.1754	0.2018	0.1518	0.1341	0.2409	0.1098
33	宁德园区	0.1667	0.1515	0.2035	0.1993	0.0541	0.1729
34	嘉兴园区	0.1625	0.1222	0.1198	0.1890	0.1473	0.1968
35	萍乡园区	0.1482	0.0281	0.0912	0.1251	0.1693	0.2119
36	安庆园区	0.1428	0.1057	0.1668	0.1597	0.1456	0.1379
37	芜湖园区	0.1323	0.0793	0.1299	0.1408	0.1322	0.1596
38	阜阳园区	0.1292	0.0257	0.1809	0.1507	0.0701	0.1498
39	合肥园区	0.1278	0.0890	0.1460	0.1648	0.1224	0.1108
40	赣州园区	0.1251	0.1100	0.1448	0.1570	0.1228	0.0892
41	新余园区	0.1227	0.0618	0.1486	0.1341	0.1121	0.1400
42	铜陵园区	0.0938	0.0297	0.1421	0.0793	0.0447	0.1210
	均值	0.2420	0.1780	0.2485	0.2814	0.1802	0.2503
	变异系数	37.5250	59.3397	40.3321	48.5682	57.0412	44.3385

从表 2 可以看出，济宁园区的创新能力综合得分为 **0.5288**，排在第一位，其创新能力得分远远高于均值 **0.2420**，并且济宁园区的创新投入和创新绩效得分也为最高，这说明济宁园区注重创新资源的投入，同时通过对创新资源的有效管理和优化配置实现了较高的创新绩效，是典型的“高投入，高产出”园区。创新支撑方面，淮安园区的得分为 **0.5017**，排名第一，远高于均值 **0.1780**，创新支撑作为园区创新的环境和驱动因素，其较高的得分能够保证园区创新能力的持续提升。创新产出方面，泰安园区的得分为 **0.6338**，排名第一，42 家园区的得分均值为 **0.2485**，创新产出代表了园区的创新创业成果形成和产出状况，较高的创新产出得分，说明泰安园区的高效地将创新资源物化成专利和新产品等创新成果，具有较高资源利用效率。集成示范方面，淮安园区的得分为 **0.5684**，排名第一，42 家园区的均值为 **0.1802**，集成示范体现了园区对于引进和创制的新产品和新技术的推广情况，较高的集成示范得分，说明淮安园区在通过对新技术和新产品的引进推广发挥了较好地辐射带动作用，创新社会效益显著。在创新能力及其一级指标的园区差异方面，利用变异系数测算的结果表明，创新投入得分的变异系数最大，为 **59.3397**，这说明 42 家园区在创新投入方面差距非常明显，落后园区存在明显的创新投入不足。而创新能力综合得分的变异系数相对于各一级指标较小，说明创新能力的园区差异相对较小，也说明园区的创新能力具有明显的结构性差异。

4 国家农业科技园区创新能力的聚类分析与制约因素研究

在对国家农业科技园区的创新能力进行评价的基础上，本文依据创新能力的五个

级指标得分，利用 K 均值聚类，将华东六省市 42 家园区划分成三个类别，即创新引领区、创新示范区和创新稳健区。创新引领区只有济宁一家园区，这说明济宁园区的创新能力在华东地区具有明显的领先优势，创新示范区包括淮安、徐州等 21 家园区，创新示范区的综合创新能力处于第二层次，创新稳健区包括盐城、东营等 20 家园区，创新稳健区的综合创新能力处于第三层次，具体如表 3 所示。

表 3: 基于创新能力聚类分析的园区分类状况

创新引领区	创新示范区	创新稳健区
济宁	淮安、徐州、泰安、泉州、泰州、白马、丰城、浦东、南通、即墨、井冈山、德州、常熟、连云港、南昌、滨州、寿光、淮北、漳州、马鞍山、萧山、	盐城、东营、烟台、宿州、崇明、金华、湖州、蚌埠、临沂、上饶、宁德、嘉兴、萍乡、安庆、芜湖、阜阳、合肥、赣州、新余、铜陵

在对园区的创新能力进行聚类的基础上，本利用障碍度模型发掘不同类别园区创新能力构建

中的关键制约因素^[13]，从而通过对关键因素的控制和改善能够有效快速地提升不同类别园区的创新能力，并形成具有针对性的建议对策。研究模型如公式（9）、（10）和（11）所示：

$$F_i = R_i \times W_i \tag{9}$$

$$I_i = 1 - X_i \tag{10}$$

$$Y_i = \frac{F_i \times I_i}{\sum_{i=1}^{20} (F_i \times I_i)} \times 100\% \tag{11}$$

上式中， F_i 为因子贡献度，即单项指标对总目标的影响程度， I_i 为指标偏离度，即单项指标评估值与 100% 之差， Y_i 为障碍度，即单项指标对创新能力的影

响程度。 W_i 为第 i 个指标的权重, R_i 为第 i 个指标所属的分类指标权重, X_i 为单项指标的标准化值。依据《国家农业科技园区创新能力监测数据 2016》中华
东地区 42 家园区的相关数据, 能够计算出创新引领、创新示范和创新稳健三个
类别园区的障碍度得分, 并将得分排在前五的指标作为园区创新能力改善的关键
制约因素。具体如表 4 所示

表 4: 不同类别园区的创新能力关键制约因素分析

园 区 类 别	关键因素 (%)				
	因素1	因素2	因素3	因素4	因素5
创新引领区	R&D人员投入 I_{12} 6.585	通过审定的新品种 数 I_{32} 4.931	园区内农户年人 均纯收入 I_{34} 4.616	推广新产品、新技 术和新设施数 I_{43} 4.572	授权发明专利数 I_{31} 4.057
创新示范区	R&D人员投入 I_{12} 6.280	R&D经费投入 I_{11} 6.143	园区年度技术性 收入 I_{51} 5.895	授权发明专利数 I_{31} 5.430	园区年度净利润 I_{53} 5.297
创新稳健区	授权发明专利数 I_{31} 7.699	园区年度技术性 收入 I_{51} 7.261	R&D人员投入 I_{12} 6.599	R&D经费投入 I_{11} 6.490	通过审定的新品种 数 I_{32} 6.332

从表 4 中可以看出, 不同类别园区在创新能力建设中最重要制约因素, 并给出针对性的对策建议:

- (1) 创新引领区即济宁园区创新能力建设的最大制约因素是 R&D 人员投入不足, 然后依次是通过审定的新品种数、园区的农户人均收入、推广新产品、新技术和新设施数以及授权发明专利数。因此, 对于创新引领区的园区应该加大创新人才的引进和投入力度。由于国家农业科技园区一般建设在县市的城郊地区, 先天缺乏引进人才的区位优势, 因此, 要求园区通过建立新型的科技人才招聘制度, 通过人才优惠政策和灵活的聘用制度吸引从事农业科研、教学和推广的技术人才投入园区创新工作。同时, 建立和完善园区的专业管理机构, 由专业管理机构通过组织培训和交流来培养中基层的技术和创新人才。此外, 园区应该注重跨区域的产学研合作, 济宁园区本地缺乏高水平的高校和科研机构, 尤其是农业类的高校, 园区必须跨区域加强与农业高校和科研机构的产学研合作, 采用科学的产学研合作模式, 提升合作单位对园区自主创新的技术支持, 从而产生更多的新产品和发明专利。杨凌农高区与西北农林大学以及“黄三角”农高区与山东农业大学的合作方式值得借鉴, 通过农业类高校研究基地的引入, 解决创新技术支持和智力资本聚焦的问题。最后, 济宁园区的辐射带动作用不足, 这需要园区探索和采用新的技术推广模式。

目前,农业科技专家大院被证明是一种可行性和可操作的推广新方式,而“专家+企业+基地+农户”的成果转化和技术服务模式在天津等园区产生了较好的效果[16]。而专家+龙头企业+农户”模式在四川地区农业科技园区中采用较多,推广成效也较为明显。

- (2) 对于处于创新示范区的淮安等 21 家园区,其创新能力建设总最重要的制约因素也是 R&D 人员投入不足,此外,园区在 R&D 经费投入、园区年度技术性收入、发明专利授权和年度净利润方面也相对不足,这些都是影响园区综合创新能力的关键制约因素。因此,对于处于创新示范区的淮安等园区同样首先需要通过人才引进、灵活聘用和自主培养等方式实现创新人力资本的聚焦。其次,研发经费投入是影响创新示范区的重要因素,对此,应该丰富园区的投融资渠道。目前,园区的运营模式主要有政府主导型、企业主导型和科研机构主导型。而政府主导型园区占据了多数,大多数园区仍然主要依靠政府投资,融资渠道单一,体现在园区内投资机构少和社会融资比例低上。以硅谷为代表的高科技产业集群发展的经验证明,科技产业的发展离不开大量的社会投资,以红杉资本和凯鹏华盈(KPCB)为代表的风险投资机构有力地促进了硅谷的高科技产业发展。同样,以色列从一个传统农业经济国家成为高科技产业强国,与以 YOZMA 为代表的风险投资计划推出紧密相关。因此,政府应该鼓励园区内风险投资机构的发展,并推动园区的创新发展与风险资本结合,并建立针对农业科技的风险投资担保公司。此外,创新示范区存在创新转化不足的问题,这需要园区一方面必须转变创新导向,构建以市场为导向创新机制,同时,大力发展从事创新市场转化的中介机构,并积极推动农业科技创业活动。最后,净利润偏低主要是由于园区的主导产业的重复性设置和部分园区仍然依靠传统产业发展造成。这要求政府必须协调园区的产业设置,突出主导的特色优势,实现园区间产业的互补或上下游相关。同时,必须重视园区创新能力的评价和监测工作,并适时推出退出机制(摘牌并减少支持力度),倒逼园区从“依靠传统产业“向”创新式发展“模式过渡。

- (3) 对于处于创新稳健区的盐城等 20 家园区，其创新能力建设中最重要制约因素是授权发明专利数不多，此外，园区年度技术性收入、R&D 人员投入、R&D 经费投入和通过审定的新产品数也是创新能力建设的重要制约因素。这说明创新稳健区的园区在自主创新能力上存在明显问题，体现在专利数和新产品上，这需要加强产学研的合作，并实现创新人才的聚集，增加创新成果的产出数量。其次，园区的技术转化能力不高，这要明确创新的市场导向，并积极推动创新转化的中介服务活动。再者，R&D 经费投资也是创新稳健区园区创新能力提升的制约因素，因此，园区需要提高研发的投入强度，通过社会资本和风险投资的引入，实现园区科研经费筹集渠道的多元化，为其创新发展提供资金支持。

5 结论与建议

本文基于已有的相关研究，建立了包括创新投入、创新支撑、创新产出、集成示范和创新绩效 5 个一级指标和 20 个二级指标的国家农业科技园区创新能力评价体系，并依据华东地区六省市 42 个国家农业科技园区的调查数据，利用 AHP-TOPSIS 的方法对其综合创新能力进行了评价，得到如下研究结论：

(1) 济宁园区的创新能力综合得分为 0.5288，排在第一位，其创新能力得分远远高于均值 0.2420。分项指标方面，济宁园区在创新投入和创新绩效得分也处于领先地位，淮安园区在创新支撑和集成示范方面排在第一，泰安园区在创新产出方面得分最高。在创新能力及其一级指标的园区差异方面，利用变异系数测算的结果表明，创新投入得分的变异系数最大，为 59.3397，这说明 42 家园区在创新投入方面差距非常明显，落后园区存在明显的创新投入不足。而创新能力综合得分的变异系数相对于各一级指标较小，说明创新能力的园区差异相对较小，也说明园区的创新能力具有明显的结构性差异。

(2) 以园区创新能力的五个一级分项指标为特征变量，利用 K 均值聚类的方法，将园区划分成三类，创新能力处于第一层次的园区为创新引领区，只包括济宁园区一个；创新能力处于第二层次的园区为创新示范区，包括淮安等 21 个园区；创新能力处于第三层次的园区的园区为创新稳健区，包括盐城等 20 个园区。

(3) 对三类园区创新能力的制约因素分析表明：创新引领区即济宁园区创新能力的最大制约因素为 R&D 人员投入不足，此外，还包括新品种创制、带动园区农民增收、新技术的推广和发明专利授权方面也相对不足。创新示范区的最大制约因素也是 R&D 人员投入不足，此外，还包括 R&D 经费投入、园区年度技术性收入、发明专利授权和年度净利润四个重要的制约因素。创新示范区的最大制约因素是发明专利数不多，此外，园区年度技术性收入、R&D 人员投入、R&D 经费投入和通过深度的新产品数也是创新能力建设的重要制约因素。

(4) 对于创新引领区通过人才优惠政策和灵活的聘用制度吸引从事农业科研、教学和推广的技术人才投入园区创新工作，必须跨区域加强与农业高校和科研机构的产学研合作，此外，园区需要探索和采用包括农业科技专家大院在内的新技术推广模式。对于处于创新示范区的淮安等 21 家园区在加强创新人才聚焦的同时，推动园区的创新发展与风险资本结合，并建立针对农业科技的风险投资 0 担保公司,丰富研发经费的筹资渠道。再者，建立市场导向的创新机制，鼓励科技市场转化中介机构的发展。对于处于创新稳健区的盐城等 20 家园区，需要加强产学研的合作，并实现创新人才的聚集，增加创新成果的产出数量。并且明确创新的市场导向，并积极推动创新转化的中介服务活动。最后通过社会资本和风险投资的引入，实现园区科研经费筹集渠道的多元化，为其创新发展提供资金支持。

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Part 2 Sectoral Analysis

J 中国和德国的旅游业概述主要影响旅游业的一个微观透视分析

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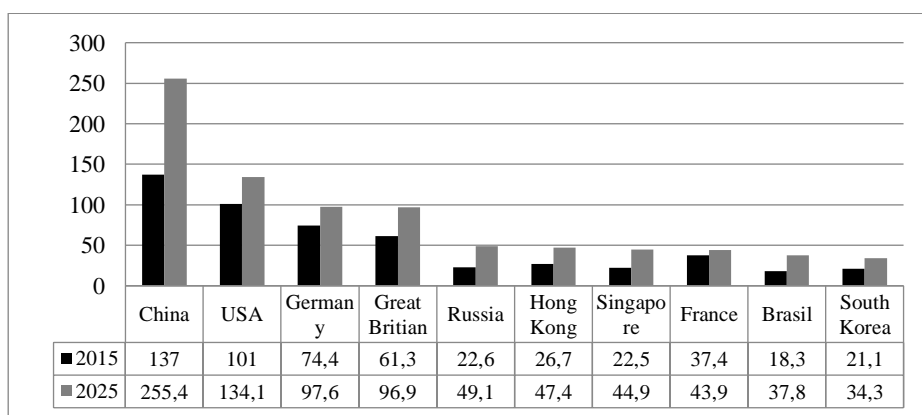
Abstract

The paper analyses the circumstances of tourism in China and Germany. It reviews the background to understand tourism developments. By employing a micro perspective of tourism, it becomes possible to understand the behaviour of an individual tourist in order to outline future market chances as well as the implications for the tourism industry.

1 简介

在德国和中国，旅游业对国民生产总值的贡献越来越大，并成为经济的主要来源。从 1995 年到 2016 年，德国入境旅游营业额从 13.8 亿美元增加到 33.8 亿欧元，而出境旅游总营业额从 4600 亿欧元增加到 721 亿欧元。今天，旅游业占德国国内生产总值的比例为 10.8%（UNWTO 2017 年短期旅游趋势）。在中国，旅游业占国内生产总值的 2.8%，自 2014 年以来每年增长率超过 10.5%。1995 年至 2016 年的旅游业从 105 亿美元入境旅游收入高达 463 亿美元，出境旅游收入从 80 亿美元增加到 573 亿美元（UNWTO 世界旅游晴雨表 2017 年）。目前，中国占全球旅游消费 21,8% 的份额最高（UNWTO 2017）。对于中国游客来说，欧洲是目标目的地的出境旅游的 50%。德国目前排在法国和奥地利之后。未来，联合国世界旅游组织（UNWTO）估计的全球旅游支出预示着这一发展将继续如下图所示：

图 1: 按国家预计的全球差旅开支 (十亿美元)



来源：UNWTO 2017

由于预测的积极发展，旅游业在文献和决策者中受到了相当大的关注（Ayeh / Shanshan 2011, Breda 2008, Wang 2017, Hollinshead 2012, Andreu / Quer 2010, Jianhong 2009）。由于德国旅游市场被称为成熟市场，未来增长的来源只能通过国际旅游来预期，因此中国出境旅游是一个有趣的来源。尽管如此，大多数出版物从宏观经济角度分析了这些发展，并为可持续旅游发展留下了管理影响。直到最近，第一批出版物都表明，为了管理未来的增长并指出一些问题（hotels.com 2017, AHK 2012, BMWI 2017a），这两个国家都面临着首要挑

战。特别是如果分析中德之间的入境和出境旅游的比例，就会发现这些发展并不一致。在过去的几年里，德国游客数保持稳定，每年有 65 万游客，而到德国的出境游增加（UNWTO 2017）。

看起来中国旅游产品似乎已经对德国旅游者失去了进一步的吸引力。另一方面，由于旅游行为不同，中国游客正在挑战德国旅游业（hotels.com 2017）。本文的目的是通过微观角度更深入地观察旅游市场，从而更多地了解这些观察到的发展。对知识的贡献具有复杂性，决定了中国和德国旅游业之间的差异。这种方法应该给予不同的观点研究方法，并给旅游业提出一些建议。

2 回顾了解旅游业发展的背景

旅游研究的理论背景必须以多学科的方法找到，并以区域发展，行为和心理理论为指导来研究旅行行为。因此旅游被理解为人们出于各种原因离开家乡目的地并在特定时间段后返回的事件。为了研究，旅游，流动性，休闲行为之间的关系已经被各个学者模拟。Kasper (1993) 的模型更多地关注各种旅游组织与作为游客的人之间的关系。为了促进旅游业，各旅游机构需要互动，以形成一个整体方法来形成报价，这将最终确定需求。由于这个模型在旅游营销中找到了它的特殊实体，因此建议旅游组织一方面可以影响旅游行为，另一方面它们需要反映潜在旅游者的个人期望。这尤其意味着目的地必须推销自己以满足潜在旅游者的需求。另一方面，Krippendorf (1996) 则更侧重于旅游的行为方面。Krippendorf 将日常工作生活或日常生活与休闲或假期生活或与日常生活区分开来。最主要的旅行动机之一是游客喜欢在度假期间获得新的体验，并喜欢以新的印象回到他的日常生活。Feyer (2015) 模型正在分析旅游经济中的更多关系及其决定因素。因此，他将各种决定因素分为决定旅游业作为一个系统的内部和更广泛的因素。特别是在他的模式中，反映了各种政治，社会和环境实体，它们总体上决定了旅游业的成功。因此，促进旅游业需要一个整体的方法，不能单靠公共政策的影响。

对中国和德国旅游者的旅游行为的了解更具描述性，更多地解释了发展的宏观经济和社会原因，而不是提供关于管理目的差异的一些信息。中国旅游市场发展迅速的主要原因在于中国有带薪休闲时间的增加 (Breda 2008)。由于这段时间仍然限制中国人喜欢将公共假期与年假结合起来，以探索自己的国家和探亲。这种巨大的内部旅游强度解释了为什么中国人在旅游业中处于领先地位 (Xi 2009)，但也提供了每个旅游者每日消费率很低的原因 (UNWTO 2017)。在入境旅游方面，由于新的旅游目的地地位规定 (ADS) 标准，更容易进入中国旅游市场来解释增长率。这些标准进一步允许旅游经营者开发自己的旅行团。(Artl / Freyer 2008)。尽管如此，迄今为止，对于这种起义增长如何能够得到促进或者为什么特别是来自德国的入境旅游停滞不前，人们几乎没有什么见解。另一方面，中国的文献则更多地集中在社区建设上，以建立旅游基础设施和开放旅游社会 (Xu / Lew / Zhang 2014, Xi / Wang 2015)。

3 方法

本文的目的是了解中国和德国的旅游发展。通过采用旅游业的微观视角，应该有可能了解个人旅游者的行为，以勾勒未来的市场机会以及对旅游业的影响。研究方法论处于描述性归纳性阶段。该分析基于对现有统计数据和报告的审查，以确定差异的领域及其对旅游组织管理的影响，如旅游经营者老旅馆。

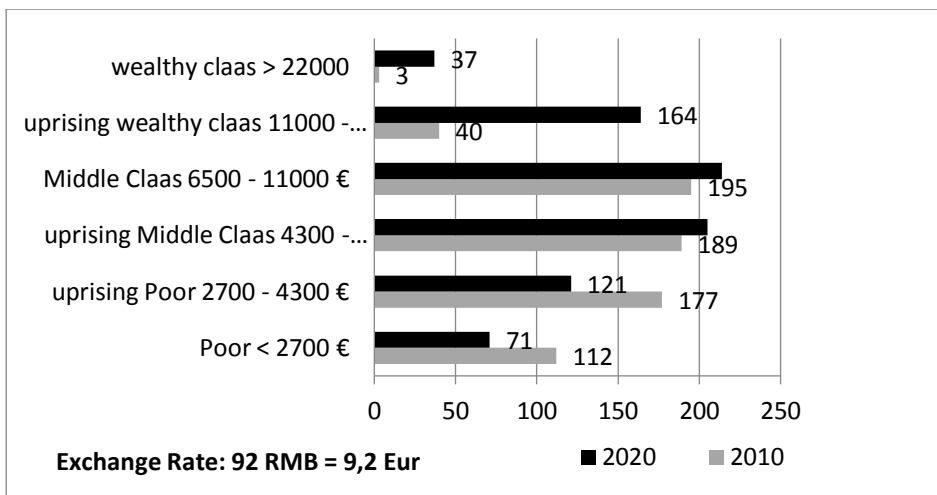
因此，基础研究模型可以直接分析当前的市场发展和个人市场行为。分析的第一步应该提供一些关于德国和中国旅游业对旅游业各个组织（酒店，旅游经营者以及旅游组织和旅游政策作为输出因素）影响的见解。因此，这项研究的重点是定义更多的因素，以解释在市场发展中指出的差异。数据来源于 UNWTO（联合国世界旅游组织），OECD（经济合作与发展组织），中国和德国的国家统计数据以及各种文章和网站方面的内容修订数据游客的性格和动机。

4 中国和德国的旅游业

4.1 宏观和微观经济决定因素作为输入因素

欧洲的旅游市场高度多元化，涵盖了一系列以文化和休闲为基础的旅游产品。德国旅游者本人被认为是一名高级旅游者，而中国旅游者则是一个相对较新的现象。在德国，市场被称为高度紧张和竞争激烈的市场。消费者的旅游行为以价格和事件为导向（BMW 2017a, BMW 2017b）。在中国，旅游市场的快速增长可以从休闲时间的增加以及中国收入状况的改善来解释，如下图所示。特别是，人们发现中国的中等收入阶层迅速增长（UNWTO 2017）。这个组织被称为高度消费导向，必须被视为当前发展的来源。

图 2: 2010 年和 2020 年中国收入分配情况

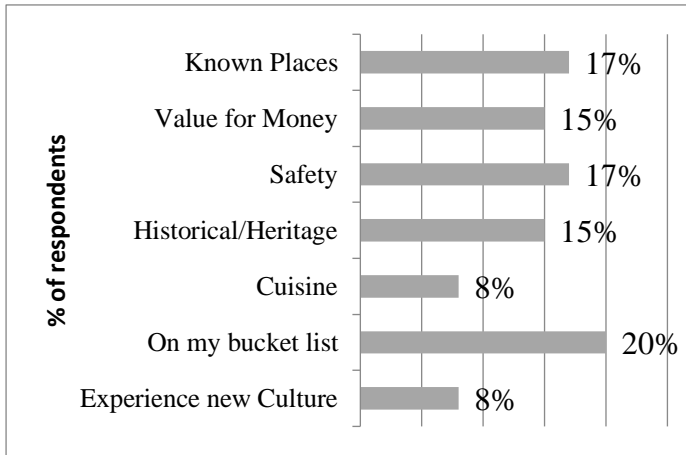


来源： UNWTO 2017

通过进一步的加速来增强本身的增长，以便更容易地获得留在国外的许可以及降低运输成本。另一方面，如果开始对旅游者确定下一个度假目的地的因素进行全球调查，就会发现两个国家旅游行为存在根本差异（hotels.com, 2017）。过去，中国在购物清单上一直为绝大多数德国人服务，而这种态度发生了变化，中国德国在购物清单上找到了一席之地。这种行为指的是一些可以延伸回商业和旅游行为之间的关联。由于中国市场的开放和商业活动的增加，私人旅游也受到影响（Li / Soyez 2016, Wen / Tisdell 2001）。然而，如果考虑到中国入境旅游收入

从 2013 年的 556 亿欧元下降到 2016 年的 444 亿欧元，探索中国旅游的时期似乎已经结束（UNWTO 2017）。购物清单旅游或纯粹的遗产和文化旅游似乎将面临更激烈的竞争。因此，目前中国似乎只是通过降低价格以获得新的旅游团体来对这种发展做出反应（Ayeh（Shanshan 2011））。

图 3: 选择下一个目的地时的标准



来源: Hotel.com 2017

而在德国，今天的旅游者从包含活动，健康，娱乐或文化和文化遗产节日的各种旅游产品中进行选择，而在中国，文化和遗产旅游产品占据主导地位（Balmer / Chen 2016）。特别是，娱乐解释存在差异。虽然中国的健康和保健有着悠久的传统，但似乎并未转化为旅游产品。到目前为止，中国人的健康状况是由其性质来解释的，然而，入境游客并没有接触到这一点（Chen 2012, Li 2004, Huang, Honggang 2014）。

在目的地管理中，（AHA2012）对该研究的分析表明，这两个国家需要更加关注目的地管理。社交媒体对旅游行为和旅游目的地有重大影响，因此需要通过媒体与潜在旅游者进行交流，以提供在线预订的可能性。一个不存在于网络上的旅游产品将不会被潜在的旅游者所知晓。两国也需要更好地适应人口变化的后果。在这两个国家，旅游者的平均年龄都在增长，而目的地只是慢慢地满足成熟旅游者的需求。此外，环境问题开始决定未来的旅游行为。特别是空气污染和烟雾对旅游行为有负面影响。最后，恐怖主义的影响决定了旅游行为的增加。虽然这两个国家都被认为是安全的，但不确定和不明确的沟通决定了长途旅行的决定。

4.2 德国的中国游客和德国的中国游客

对旅游者的行为和期望进行分析，为未来对旅游的理解和管理提供了一些建议。德国游客似乎将他们的国际经验转移到中国，并有更高的兴趣融入中国，而中国游客在德国似乎更多地留在自己身上。下表应总结各种报告观察结果，并概述旅游行为的主要差异：

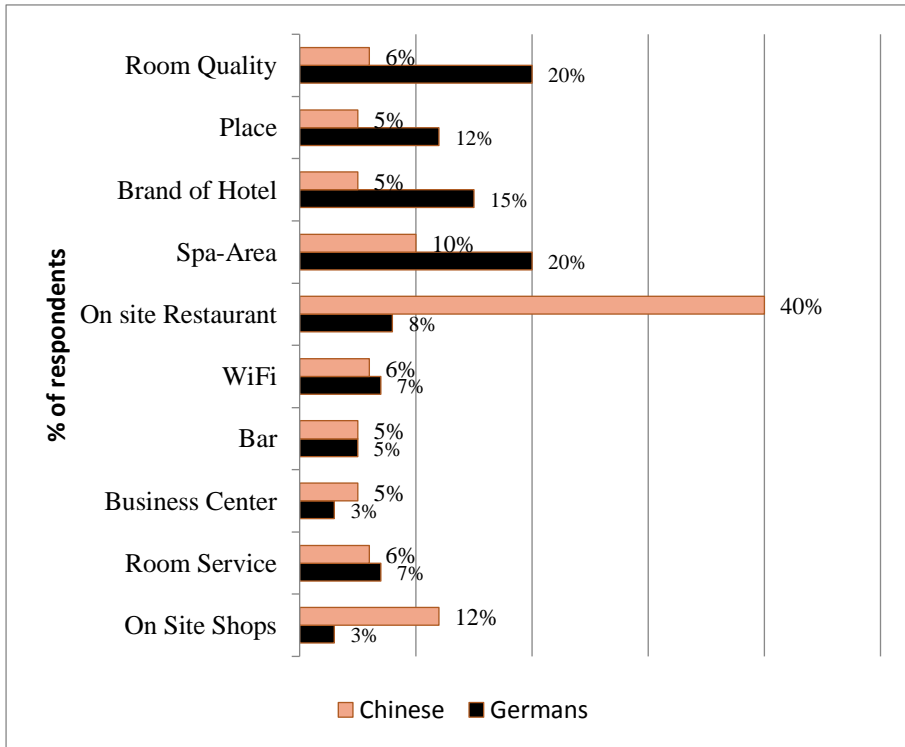
表 1: 中国人和德国人的旅游行为差异

标准	在中国的德国人	在德国的中国人
餐厅	寻找当地美食或中国和欧洲食品混合的酒店。对于食物的体验是一种旅行动机。	期待亚洲和中国的食品，包括中国餐馆服务。
选择酒店时的重要选择标准	酒店，地方，房间品质和水疗设施	主要提供餐厅以及店内的商店。
酒店客房	高品质的客房	平等的房间，房间的质量
员工	期待会讲英语。社交交往基于一点力量距离和小等级。服务人员被视为同行，以便享受舒适的住宿。	期待会讲英语和普通话语言。社交是基于高权力距离和等级制度。服务人员被视为地位较低。
酒店的服务	期待当地的向导	由于自己跟团出行，不期待酒店向导
支付方式	国际信用卡	包括信用卡及中国移动支付方式（支付宝和微信）

来源：AHK 2012, DIHK 2014, TUI AG 2012, Hotels.com 2017 以及自己的观察

例如，德国人和中国游客如何选择一家酒店，这些差异就会产生影响。而对于中国游客来说，酒店主要被视为住宿地，对于德国游客来说，酒店是旅行安排的重要组成部分（见下图）。因此，德国旅游者愿意为旅馆分配更高的预算，而不是中国游客准备做的事。

Formel 1: 选择酒店时的标准



来源：Hotels.com 2017 年

另一方面，对于中国游客来说，消费西方产品是旅游的主要动力，如下图所示。因此，对旅行体验和纪念品的评估是不同的。在 Krippendorf (1992) 之后，他们更多地被当地的经验所解释，而中国人则更多地通过获得国际产品来评估他们。

图 4: 中国游客在 2013 年入住期间的热门产品



来源: Hotels.com 2017 年

5 对旅游管理和研究的影响

在第一次分析的反思中，为了更好地适应即将到来的旅游业对可持续发展的需求，旅游业可以确定以下第一个影响：

- 1 酒店管理：在中国和德国，明确要求员工提高语言技能，并确定与自己国家相矛盾的客 - 客关系。鉴于德国旅游者希望获得更多的酒店本地支持，中国游客由于自己的旅游指南而减少了对这种服务的需求。中国游客希望在亚洲的热情好客的基础上考虑更全面的治理，同时考虑到低预算的住宿。
- 2 中国酒店应该更多地关注酒店品牌，因为这在德国被视为质量的标志。这尤其适用于房间的质量和可能的健康可能性。与中国游客相比，德国游客愿意为这些服务付费。
- 3 两国都需要更多地关注社交媒体和预订引擎。这特别适用于中国市场，因为德国人喜欢使用单一包装，并在设计旅行时选择不同的选项。
- 4 两国的目的地管理部门都需要考虑更多老年旅游社会的需求。这意味着不仅仅迎合物理障碍，而且还要设计新产品以考虑这个重要的旅游市场集团的兴趣。因此，旅游应该根据不同的概念和可能性开发，以吸引人。
- 5 在中国，乡村旅游可能是一种具有吸引力的旅游产品，需要更好地进入。尽管如此，这也需要一个清晰的质量策略。
- 6 在中国开展旅游团的旅游经营者需要开发联合产品，将各种活动与遗产产品相结合。特别是对于德国游客来说，节目必须有更大的灵活性，而中国人需要更多的导游。此外，旅游经营者应在其安排中纳入对典型零售产品的高度兴趣，并可能寻求新的合作。
- 7 在德国开展包游的旅游经营者应该开发传统产品和购物旅游的联合产品。因此也应该从零售业向酒店业转移收入，以反映中国旅游消费的结构。
- 8 本文只能指出现有数据的差异。尽管如此，未来研究分析两国旅游差异有利于支持两国的可持续发展，应该更多的是遗产和文化旅游的生命周期，而且这种产品需要根据未来旅游世代的需求加以管理。正如在这两个国家，娱乐和活动导向正在增加以及可持续旅游的重要因素，这些因素的相互解释需要纳入旅游产品的设计。目前的观察表明，意义和解释差异很大，这决定并解释了旅游行为。

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Part 2 Sectoral Analysis

K 山东省国家农业科技园区发展态势和创新能力研究

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摘要

通过对山东省 9 个国家农业科技园区在运营架构、创新支撑、创新水平、创新支撑和创新绩效等方面的数据对比研究，分析了山东省各园区的运营模式和创新能力建设与发展的现状，并指出园区创新能力发展中存在的问题，给出了提出具有针对性的对策建议。

关键词

山东; 国家农业科技园区; 创新能力; 调查研究;

国家农业科技园区建设工作是党中央、国务院提出的一项重要任务。其创新能力评价既是国家创新调查制度的重要组成部分，也是推动国家农业科技园区创新活动健康持续发展的重要手段。农业科技园区演绎了科技农业时代一种全新的经济发展模式，造就了科技农业产业这一新的经济形态，将成为21世纪农业发展的主流形态。¹国家农业科技园区一般是指在农业智力资源密集、具有一定产业优势和区位优势、经济相对比较发达的城郊和农村划出一定区域范围，由政府、集体经济组织、民营企业、外资企业、农户共同投资兴建，以科研、教学和技术推广单位为技术依托，开发和引进高新农业技术、新品种和新设施，形成一个区域性的农业科技创新基地、示范基地和生产基地，推动区域农业经济发展。²

科技部、农业部等6部委联合推进的国家农业科技园区建设工作已经开展了十余年的时间，山东省作为农业大省积极落实农业科技园区建设工作，以工业发展的思路解决农业问题，发挥科技引领支撑作用，以深化农业供给侧结构性改革，建设完善省级农业科技园、省级农高区、国家农业科技园区、国家农高区四级农业科技园区体系。目前，山东省已建设有19个国家农业科技园区，省政府批准建设了14个省级农业高新技术产业开发区，省科技厅、财政厅按照“一县一园一特色”思路，联合批准建设了111个省级农业科技园，实现了全省农业县（市、区）的全覆盖。山东省农业科技园区发展工作为其农业产业和战略性新兴产业基地的建设提供巨大支持，逐渐成为山东省扶贫攻坚、发挥农业大省优势的重要载体。

¹ 王欧. 农业科技园区发展研究[D]. 中国农业大学, 2003

² 蒋和平, 宋莉莉. 国家农业科技园区的运行模式分析 [J] 科技与经济, 2006, 19(6): 21 - 24

1 Introduction

国家农业科技园区建设工作是党中央、国务院提出的一项重要任务。其创新能力评价既是国家创新调查制度的重要组成部分，也是推动国家农业科技园区创新活动健康持续发展的重要手段。农业科技园区演绎了科技农业时代一种全新的经济发展模式，造就了科技农业产业这一新的经济形态，将成为21世纪农业发展的主流形态。³ 国家农业科技园区一般是指在农业智力资源密集、具有一定产业优势和区位优势、经济相对比较发达的城郊和农村划出一定区域范围，由政府、集体经济组织、民营企业、外资企业、农户共同投资兴建，以科研、教学和技术推广单位为技术依托，开发和引进高新农业技术、新品种和新设施，形成一个区域性的农业科技创新基地、示范基地和生产基地，推动区域农业经济发展。⁴

科技部、农业部等6部委联合推进的国家农业科技园区建设工作已经开展了十余年的时间，山东省作为农业大省积极落实农业科技园区建设工作，以工业发展的思路解决农业问题，发挥科技引领支撑作用，以深化农业供给侧结构性改革，建设完善省级农业科技园、省级农高区、国家农业科技园区、国家农高区四级农业科技园区体系。目前，山东省已建设有19个国家农业科技园区，省政府批准建设了14个省级农业高新技术产业开发区，省科技厅、财政厅按照“一县一园一特色”思路，联合批准建设了111个省级农业科技园，实现了全省农业县（市、区）的全覆盖。山东省农业科技园区发展工作为其农业产业和战略性产业基地的建设提供巨大支持，逐渐成为山东省扶贫攻坚、发挥农业大省优势的重要载体。

³ 王欧. 农业科技园区发展研究[D]. 中国农业大学, 2003

⁴ 蒋和平, 宋莉莉. 国家农业科技园区的运行模式分析 [J] 科技与经济, 2006, 19 (6): 21 - 24

2 山东省 9 个国家农业科技园区运营架构分析⁵

山东省 9 个国家农业科技园区建设基本情况和管理模式见表 1 所示。

表 1: 山东 9 个国家农业科技园区建设基本情况

园区所在地	寿光	青岛	滨州	东营	烟台	济宁	泰安	临沂	德州
园区管委会行政级别	副县级	地市级	县级	县级	副县级	县级	副县级	副县级	副县级
园区事业编制数/人	25	13	28	31	20	178	31	28	15
运营模式	政府主办型	政府主办型	政府主办型	政府主办型	政府主办型	政府主办型	政府主办型	政府主办型	政府主办型
入选批次	第一批	第二批	第三批	第四批	第五批	第五批	第五批	第六批	第六批
获批时间	2001 年	2003 年	2010 年	2012 年	2013 年	2013 年	2013 年	2015 年	2015 年

从行政架构来看，寿光国家农业科技园区是山东省唯一一家于 2001 年经科技部批准试点建设的首批国家重点农业科技园区，由寿光市人民政府主导，寿光市蔬菜高科技示范园担任园区管委会，副县级行政级别，人员事业编制 25 人；青岛国家农业科技园区是国家科技部于 2003 年批准建设的第二批国家农业科技园区之一，青岛即墨农业高新技术开发区管理委员会担任园区管委会，地市级行政级别，人员编制 23 人。总体而言，青岛即墨国家农业科技园区也属于政府主导型国家农业科技园区；滨州国家农业科技园区是国家科技部于 2010 年批准建设的第三批国家农业科技园区之一，由滨州市人民政府担任地方主管部门，黄河三角洲（滨州）国家农业科技园区管委会担任园区管委会，正县级行政级别，事业编制 28 人；东营国家农业科技园区是国家科技部于 2012 年批准建设的第四批国家农业科技园区，是环渤海经济带和黄河三角洲高效生态经济区的腹地，是黄河三角洲国家现代农业科技示范区的核心区之一。园区以东营市人民政府为地方主管机构，东营农业高新技术产业示范区管理委员会担任园区管委会，赋予一级财政体制和经济社会管理权限，并配置财政、经发、建设、国土、环保、国税、地税等职能部门，正县级行政级别，事业编制人员 32 人；烟台国家农业科技园区、济宁国家农业科技园区以及泰安国家农业科技园区均为国家科技部于 2013 年批准建设的第五批国家农业科技园区。三家园区管委会均属副县级行政级别，人民政府作为地方主管机构的政府主导型运营模式；临沂国家农业科技园区以及德州国家农业科

⁵ 相关资料参考山东省科技扶贫云平台 <http://www.sdast.org/>

技园区均为国家科技部于 2015 年批准建设的第六批国家农业科技园区。临沂国家农业科技园区由临沂市河东区人民政府作为地方主管机构，临沂（河东）农业高新技术产业示范区管委会担任运营主体，副县级行政级别，事业编制人员 28 人；德州国家农业科技园区由山东省科技厅作为地方主管机构，德州（乐陵）农业高新技术产业示范区管委会担任园区管委会，副县级行政级别，事业编制人员 15 人，园区管委会主任由市政府分管副市长担任，园区打造了由金丝小枣、马铃薯、调味品三个特色主导产业和生态畜牧养殖、玉米精深加工、现代农业物流三个配套服务产业构成的产业链。总体而言，山东省绝大部分国家农业科技园区均以政府主导型运行模式为主。

3 山东省 9 个国家农业科技园区创新能力对比分析

3.1 数据来源

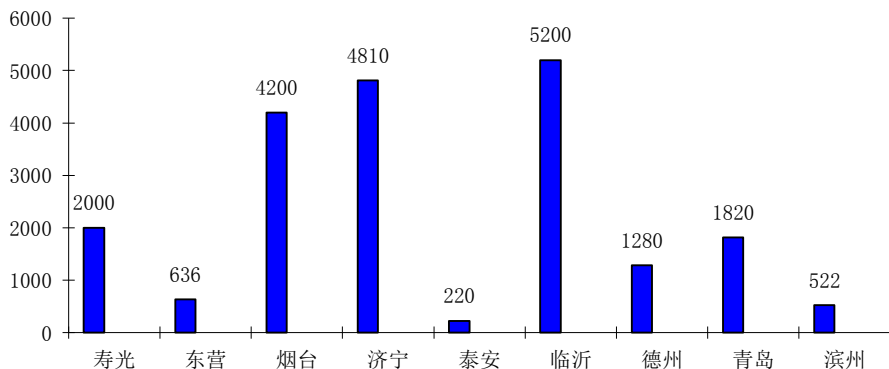
本文所用数据来源于各地园区管委会、地市科技部门以及园区内提供数据的企事业单位。

3.2 创新支撑

3.2.1 核心区建成面积

As of the end of 2015, the core areas of agricultural science and technology parks 截至 2015 年底, 山东省 9 个国家农业科技园区核心区共建成面积 18346m², 其中寿光国家农业科技园区 2000m²、东营国家农业科技园区 636m²、烟台国家农业科技园区 4200m²、济宁国家农业科技园区 4810m²、泰安国家农业科技园区 220m²、临沂国家农业科技园区 5200m²、德州国家农业科技园区 1280m²、青岛即墨国家农业科技园区 1820m²、滨州国家农业科技园区 522m²。根据图表 1 相关数据显示, 临沂的核心区面积最大, 济宁国家农业科技园区紧随其后, 而泰安、滨州、东营等地核心区面积相对较小。

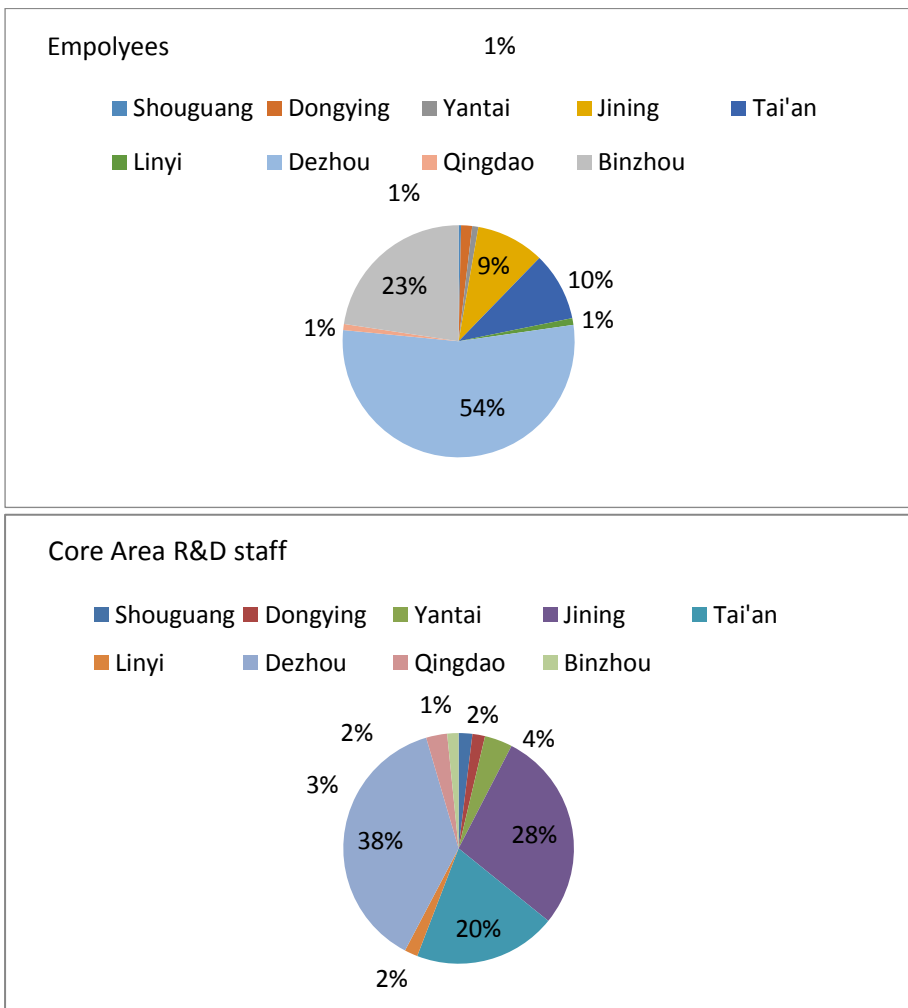
图 1: 山东 9 个国家农业科技园区核心区已建成面积分布



3.2.2 人力资源

截至 2015 年底，在园区人员队伍方面，山东省 9 家国家农业科技园区管委会相关机构人员总数达 376 人，园区当年企业从业人数 237578 人，企业科技人员数达 14832 人，企业聘请专家总数达 1122 人，2015 年度新安置就业人数达 30166 人。如图二所示，德州园区从业人员数量、核心区研发人员数量占比均位列第一，园区从业人员数占比最低的为寿光国家农业科技园区，占比不到 1%，园区的核心区研发人员数占比最低的为滨州国家农业科技园区，仅占比 1%左右。

图 2: 山东 9 个国家农业科技园区从业人员和研发人员的分布



3.2.3 投融资

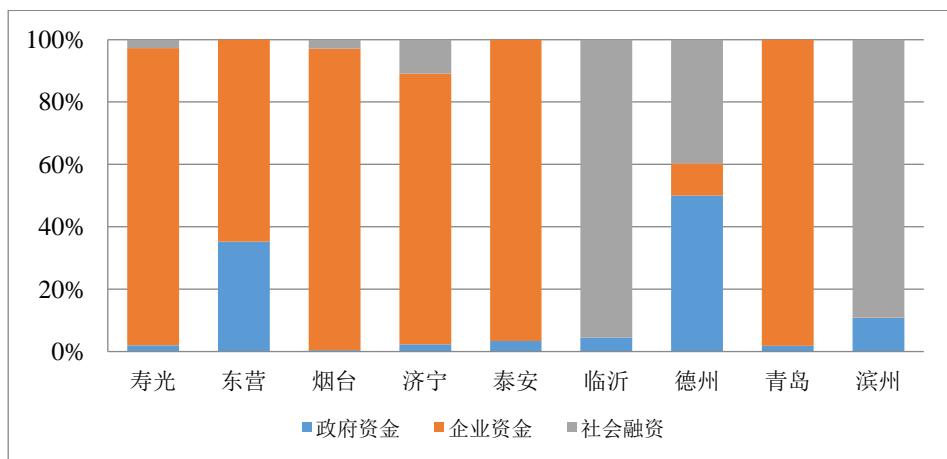
据收集数据统计，山东省 9 家国家农业科技园区在 2015 年度总共投入资金 2343804.794 万元，其中政府资金 94959.68 万元，企业资金 1959330.114 万元，其他社会融资 289515 万元。（见表 2）

表 2: 山东 9 个国家农业科技园区各类融资额 (万元)

所在园区	寿光	东营	烟台	济宁	泰安	临沂	德州	青岛	滨州
政府资金	992.2	26057.98	320	43900	2874.5	1540	12600	1810	4865
企业资金	49302.98	47798.52	66293.72	1615388	80484.3	0	2600	97457	5.1635
社会融资	1360	0	2006	202689	0	33460	10000	0	40000
累计投入	51655.18	73856.5	68619.72	1861977	83358.8	35000	25200	99267	44870

其次，寿光、东营、烟台、济宁、泰安、青岛等六个国家农业科技园区的企业资金投入占比均高于政府资金投入占比和社会融资占比，仅德州国家农业科技园区的政府资金投入高于企业资金和社会融资资金占比，临沂、滨州两家国家农业科技园区的社会融资占比处于主导地位，远高于政府资金和企业资金占比。

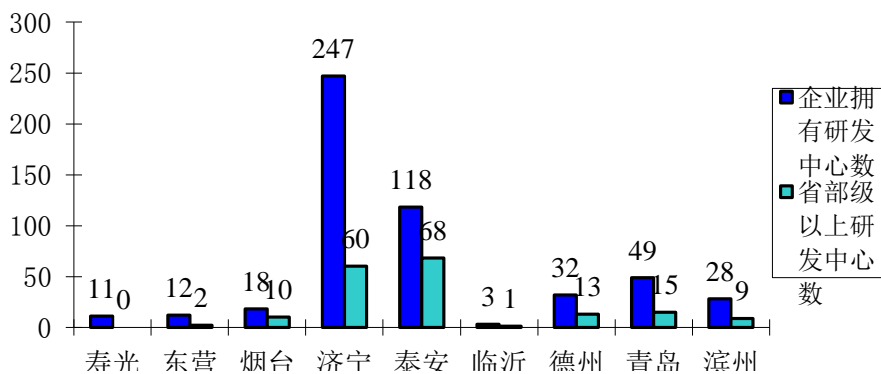
图 3: 山东 9 个国家农业科技园区的投入分布



3.2.4 研发中心培育

截至 2015 年底,山东省 9 家国家农业科技园区现有研发中心总数为 518 家,其中省部级以上研发中心共 178 家。如图四所示,济宁地区研发中心数量最多,为 307 家,其中包含 60 家省部级以上研发中心。临沂地区研发中心数量最少,仅拥有研发中心 4 家,其中省部级以上研发中心仅 1 家,处于相对落后位置。

图 4: 山东 9 家国家农业科技园区研发中心分布

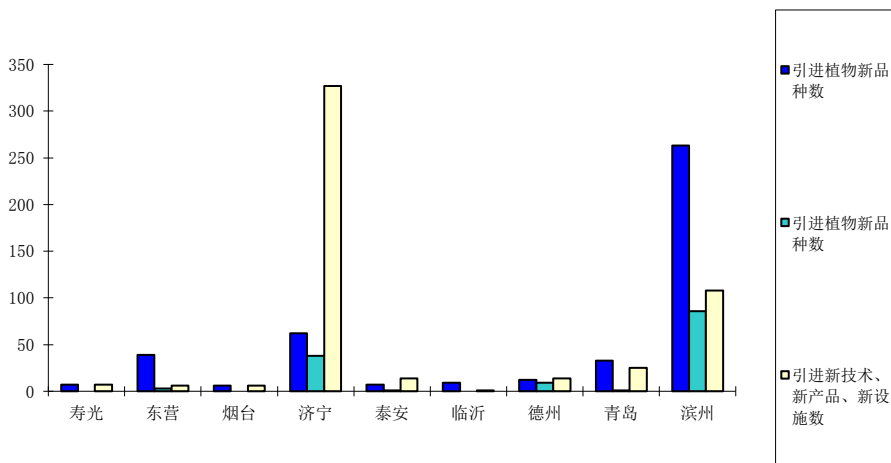


3.3 创新水平

3.3.1 科技开发能力

截至 2015 年底,山东 9 个国家农业科技园区共引进植物新品种数 438 个,当年企业引进畜禽水产新品种 138 个,引进新技术、新产品、新设施数共 508 个。其中,滨州在引进植物新品种数、引进畜禽水产新品种方面均位列山东省第一名,而济宁在引进新技术、新产品、新设施数方面位列第一。如图五所示。

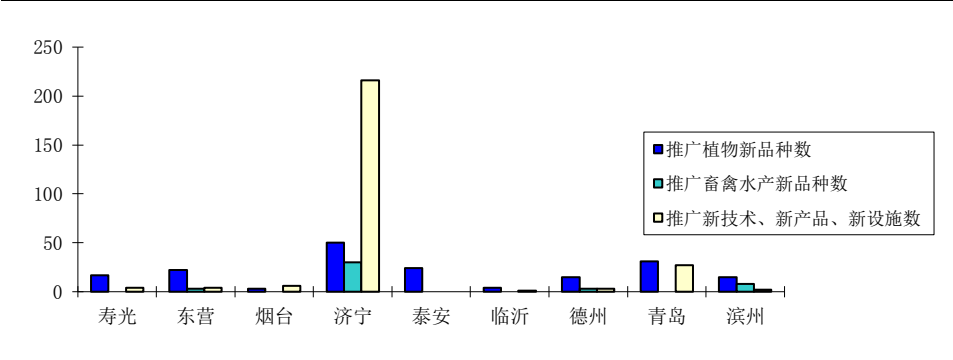
图 5: 山东省 9 个国家农业科技园区科技开发情况



3.3.2 科技推广能力

截至 2015 年底，山东 9 个国家农业科技园区共推广植物新品种数 181 个，当年企业推广畜禽水产新品种 44 个，推广新技术、新产品、新设施数共 263 个。其中，济宁在引进植物新品种数、引进畜禽水产新品种数以及引进新技术、新产品、新设施数方面均位列山东省第一名，而临沂则处于相对较落后位置。如图六所示。

图 6: 山东省 9 个国家农业科技园区科技推广情况

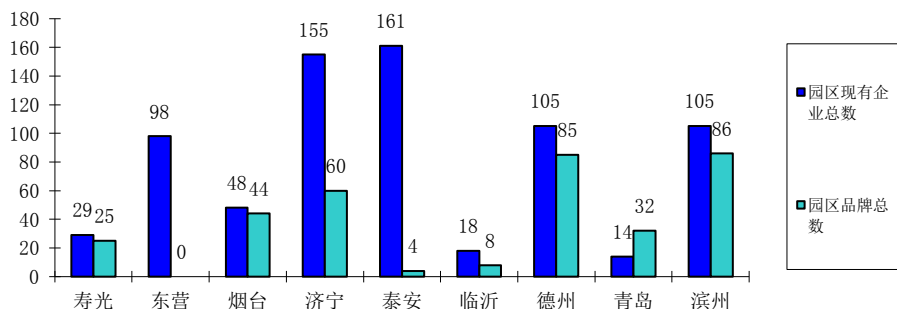


3.4 创新绩效

3.4.1 园区企业入驻和品牌创建

截至 2015 年底, 山东省 9 家国家农业科技园区现有企业(泛指核心区和示范区)总数为 733 家, 在 9 个园区中以泰安园区吸引入驻企业最多, 达 161 家; 济宁园区以 155 家紧随其后; 而青岛园区现有企业数仅为 14 家, 处于相对落后地位。另外, 山东省 9 个园区的产品品牌总数为 344 个, 其中滨州园区以及德州园区分别拥有 86 个、85 个产品品牌数处于山东省较高水平, 东营园区在园区产品品牌数方面处于较为落后位置。总体看来, 济宁园区在园区企业入驻以及品牌创建方面均处于较为优势地位。如图七所示。

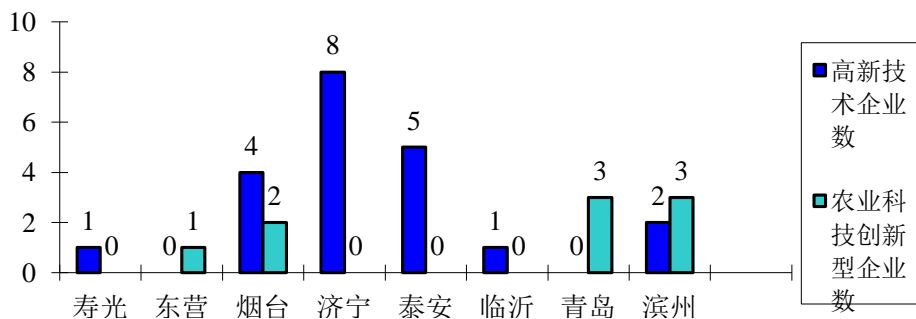
图 7: 山东省 9 个国家农业科技园区企业入驻和产品品牌分布



3.4.2 农业科技创新型企业和高新技术企业培育

截至 2015 年底, 在山东省 9 个国家农业科技园区 733 家现有企业中科技创新型企业 94 家、高新技术企业 16 家。其中, 除德州地区以外, 德州园区拥有高新技术企业数最多, 达 8 家; 滨州地区则发展较为平衡, 拥有高新技术企业 2 家、农业科技创新型企业 3 家; 寿光园区、临沂园区以及东营园区则处于较为落后位置。

图 8: 山东省 9 个国家农业科技园区入驻企业情况对比



3.4.3 经济效益

截至 2015 年底，山东省 9 个国家农业科技园区自建园以来累计产值为 12 947 120 万元，2015 年度净利润 1 019 022 万元，年度口创汇 332 975 万元。如图九、十所示，济宁园区以 7 267 827 万元累计总产值、2015 年度净利润 534 537 万元处于最为领先地位；其次，滨州地区以 2 884 000 万元累计总产值以及 203 877 万元年度净利润处于第二位次；德州园区、烟台园区以及青岛园区则处于平稳发展状态；而东营园区的 2015 年度净利润则出现负值，亏损高达 4535 万元，处于较为落后位置。

图 9: 山东省 9 个国家农业科技园区年度总产值比较

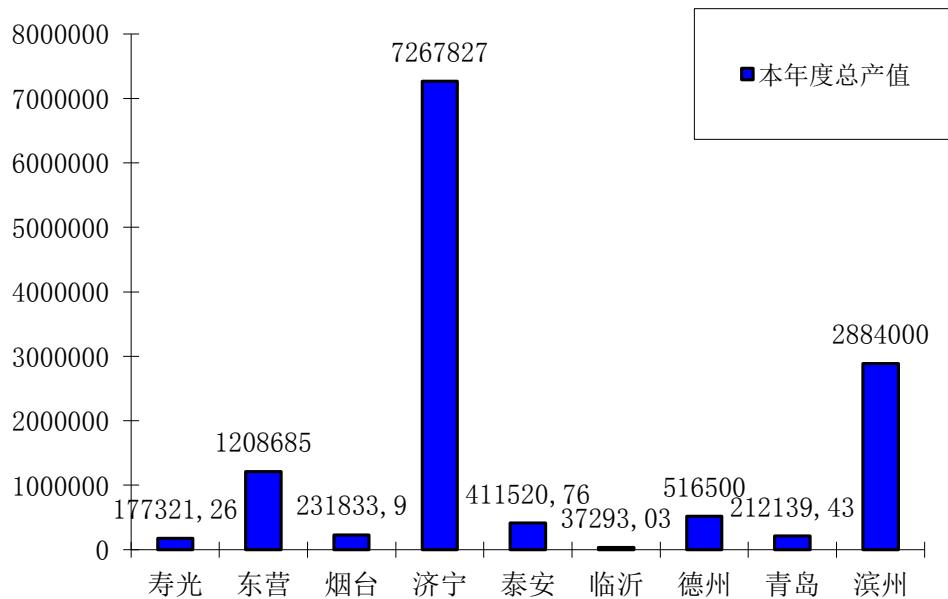
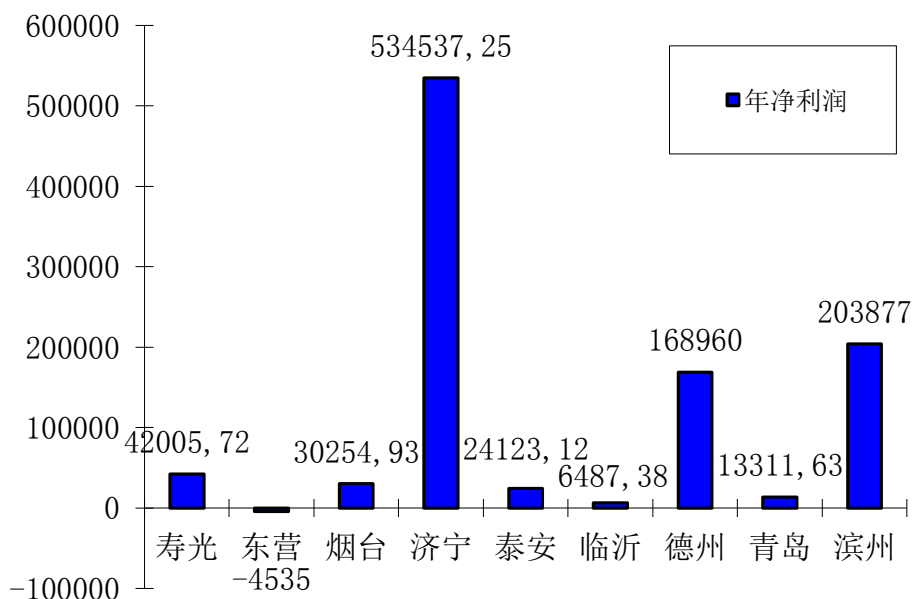


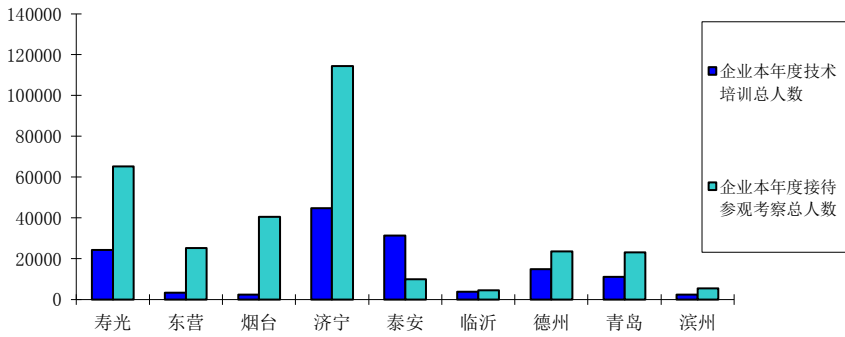
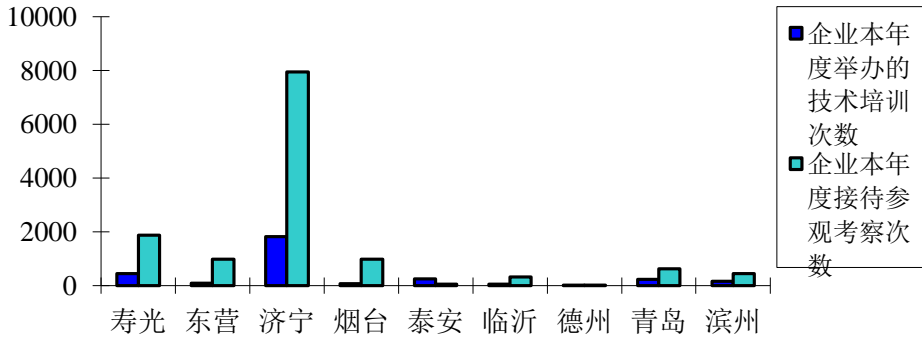
图 10: 山东省 9 个国家农业科技园区年净利润比较



3.4.4 科技服务

截至 2015 年底，山东省 9 个国家农业科技园区 2015 年度举办的技术培训 3131 次，年度技术培训 138815 人，本年度接待参观考察 13272 次，年度接待参观考察 312047 人次。如图所示，除济宁园区以外，寿光园区 2015 年度举办技术培训 447 次、年度接待参观考察 1875 次，均处于较为领先地位；济宁园区 2015 年度技术培训总 138815 人、年度接待参观考察总人数 312047 人，总体处于领先地位。其次，东营园区、烟台园区则属于稳定发展状态；而德州地区年度举办技术培训仅 10 次、年度接待参观考察 26 次，处于较为落后位置。

图 11: 山东省 9 个国家农业科技园区开展技术培训及接待参观情况



4 山东省 9 个国家农业科技园区发展中存在的问题

4.1 政府主导式运营模式阻碍园区可持续性发展

通过对山东省九个国家农业科技园区的资料分析，仍以政府主导型为主要运营模式，园区管委会占据园区各大事项的中心主导地位，使得园区受到极大束缚、违背园区的市场运行规律，一定程度上阻碍了园区的发展。目前大部分园区在资源配置方面有依赖中央政府和各级地方政府的优惠政策的现象，进一步制约园区运用市场手段全面调动园区已有资源，极不利于园区的可持续发展。

4.2 园区投融资机制不完善

山东省 9 个国家农业科技园区在投融资总体数额方面表现优异，但是大部分园区均未形成完整的园区投融资机制。园区企业之间大部分处于独立状态，与外部更是分离隔绝状态，这严重影响了来自社会各领域的全方位投融资平台的搭建，使园区投融资能力大大下降，极大程度制约了园区产业集聚效应的发展。全方位、多层次、多领域的投融资机制的建立成为园区经济建设发展完善的重要工作之一。

4.3 园区特色产业不突出

根据走访调查结果显示，山东省 9 个国家农业科技园区均未系统创建自身特色产业。大多数园区的产业类型相近、技术方法相似，园区自身资源潜力发掘程度极低。这也进一步导致了园区内企业集群工作的建设受阻，难以发挥特色产业对周边农业结构优化、产业升级的带动作用。待系统发展完善的特色产业建设工作也将进一步影响农业科技园区的经济发展建设工作，制约园区可持续发展。

4.4 园区科技创新能力有待实质性增强

山东省自 2001 年建设第一家农业科技园区——寿光国家农业科技园区以来，通过大量先进农业科学技术的引进，山东省农业产业技术实力整体提升明显，但是山东省 9 个园区科技创新能力的整体提升速度却处于较低水平，发展极不均衡。截至 2015 年底，济宁园区的科技创新能力处于较为领先水平，甚至超过早在其先建立的寿光、青岛、滨州、东营四家国家农业科技园区。整体上讲，以所选取的 9 家园区为代表的山东省国家农业科技园区的科技创新能力亟待提高，大部分园区仍处于发展阶段。

5 对策建议

5.1 创新园区运营体制与制度，打破政府主导式运营模式

为打破山东省绝大部分园区对政府的巨大依赖性，解决政府主导型运营模式对园区体制与制度建设发展的阻碍。首先，应将园区行政管理型服务体系转型为运营型服务体系。具体措施包括：转变政策支持领域、方式和力度，扭转园区发展路径依赖，构建政策作用的联动杠杆机制，将政府输血机制转化为社会合力造血机制；其次，创新政府对园区的扶持方式，可以基于较为成熟的园区发展成效评价标准之上针对不同发展阶段的园区给予不同的扶持力度，对不同发展特色的园区实施不同的扶持政策，精准有效的发挥政府功能。此外，推动园区管理体制实现“政务、事务、服务”相分离，政府只在招商引资、土地流转、生产补贴、整体营销、基础设施建设等方面给予一定助推，特别是提高土地流转效率，创新土地流转模式，解决土地流转的后续问题⁶

5.2 推动园区多元化投融建设发展

为解决山东省绝大部分园区投融资机制不完善问题，建设以政府投资为主导，企业、金融机构资金、社会资金等为辅的多元化园区投融资体系将成为园区建设的重要发展方向。可以采取建立银企座谈会制度，推动银企交流；定期组织有融资意向的农业园区科技企业与有关金融机构座谈，搭建连接企业与金融机构的信息共享平台；组织园区企业成果交易会，以增强金融机构对科技成果及市场前景的了解，促进科技创新和科技成果产业化进程；借助互联网平台，加大对园区环境、园区特色的宣传力度；此外，还可以借助互联网金融手段进一步丰富园区多元化投融体系的建设发展，例如将众筹等互联网金融方式巧妙地与园区小型融资项目相结合，借助“互联网+”实现转型升级。

5.3 因地制宜，针对性引导园区特色产业发展

不同地域环境、不同建设时期的园区拥有不同的发展基础和障碍，因地制宜地发展园区特色产业将大大提升园区的经济发展能力。因此，应联合高校、研究机构积极开展园区周边地区的地域调研，发现并充分调动园区周边环境的最大潜力，为园区特色产业的构建提供正确的发展方向；同时，也可以借助农业科技园区建

⁶蒋和平，张春敏. 对试点的国家农业科技园区建设重新定位的思考 [J]. 科技与经济, 2005, 18 (4): 30 - 32

立专业合作组织,担任意见领袖角色,来指导农户根据市场需求以及当地特色安排农户生产的品种和数量,并有计划地组织收购和上市,以有效地避免生产经营的盲目性,最大程度的发挥园区地域优势;此外,在发展园区自身特色产业的同时,与其他地域园区的合作关系的构建工作不容忽视,应充分借助与其他园区的良好合作关系巩固自身特色产业的发展

5.4 应用平台思维提升园区科技创新能力

为提升园区科技创新能力,可以充分借鉴平台思维。搭建“产学研”平台,通过搭建连接园区、政府及高校的三方合作平台可以实现资源的高效利用,推动园区发展的同时也为高校的发展提供资源支持、为政府政策的制定提供更加具体可靠的参考,三方共赢;搭建山东省农业科技园区信息平台,完善山东省的农业信息网络体系和农业信息资源数据库,促进省内园区合作共赢的同时也将提升山东省整体农业科技水平;搭建园区人才引进平台,园区可以通过组织人才合作培养计划与高校、科研机构建立良好合作关系,吸引大量的农业科学技术、经济管理等方面的大量人才加入农业科技园区的建设发展队伍,为园区可持续性发展提供强大的人员支持。

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Part 2 Sectoral Analysis

L 才管理：阿拉伯联合酋长国旅游零售组织的基准

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摘要

人力资本是任何组织的支柱。他们在价值创造和成功模式中发挥着至关重要的作用。人力资源为国家的经济发展做出了贡献。与过去不同，今天的人才已经开始认识到工作与生活平衡的重要性。机构中的不同部门开始储备新员工以适应变化和创新。这项研究考察了人才管理，这些人才管理为阿联酋全球最大的旅游零售机构之一的人力资源绩效和生产率做出了贡献。本文采用描述性方法，确定了200个样本量（ $n = 200$ ）。该研究还采用了一系列深度访谈作为数据收集和分析的一部分。研究结果显示，旅行零售组织中的人才管理实践从工作参与，培训与发展，绩效评估以及组织中人员的积极强化中得到有效实施。战略性人力资源规划提供了组织有效性和增强的人力资源能力。这些数据向人力资源从业人员提供了重新制定和制定政策的指导方针，以改变和不断改进，以解决组织招聘和晋升决策方面的人才缺口。

关键词

人才管理，旅游零售机构，阿拉伯联合酋长国；

1 一，前言

组织经常参与人才管理，因为他们认为这是必要的。然而，为了从人力资源开发投资中获得最大收益，必须以战略方式完成，以实现组织目标和目标，并相应地提高员工绩效。

与过去不同的是，今天的员工已经开始意识到工作满意度和良好工作条件的重要性，没有这些人才就不会有好的表现。没有工作和生活平衡的工作会导致员工倦怠，从而影响整体绩效质量。

满意和快乐的员工有助于实现组织的愿望。管理层与员工之间相互理解和相互依存的氛围是组织效率和生产力的工具。本文重点介绍影响员工工作满意度和幸福感重要来源的人才管理实践。

研究具备以下目标：

- a) 描述阿拉伯联合酋长国旅游零售组织的人才管理实践；
- b) 确定阿拉伯联合酋长国和阿拉伯联合酋长国旅游零售组织人才管理实践的效果
- c) 为阿拉伯联合酋长国的旅游零售组织提出相关的人才管理计划。

2 二. 文献综述

管理人才是一套程序和流程，将组织的人才信条和战略转化为实现卓越组织的诊断和实施计划（Berger, L. 和 Berger, D., 2011）

满足社会的许多期望，同事和客户越来越成为当今必不可少的组织成功要求（Popcorn, 1991; Kaufman, 1998）。作为对“培训需求评估”在外部和内部存在的不断增长的需求的反应，正被视为当前组织管理的支柱。公共和私营部门在优先考虑和确定绩效，资源需求和干预要求中存在的问题方面正取得巨大进展。根据 Leigh 等人的研究，培训需求评估（TNA）因此被考虑。（2000年）是干预人力资源开发的第一步。

Tschohl（1999）和 Messmer（2001,2002）声称，士气高昂的员工曾经不依赖管理层来鼓励他们的成长并提供令人满意的工作环境，但他们主动评估他们的专业和情感工作需求，采取措施确保满足这些需求。

相比之下，麦肯锡公司在激励员工方面进行的一项调查总结了三大激励因素，这些激励因素使员工的满意度显著提高，并且可以从管理层中获得满足。全球高管，经理和员工的总回应为 1047 人，其中超过四分之一的受访者是公司董事和首席执行官或其他高级管理人员，结果显示，员工非常重视这些非财务动机如下：

（1）直接经理人的赞扬，（2）领导关注（例如，一对一对话）和（3）领导项目或工作组的机会。这些激励措施的动力不亚于最高评级的财务激励措施，例如奖金，增加的基薪和股票期权。该调查的前三名非金融激励因素在让员工感受到他们的公司重视他们，认真对待他们的福利并努力为职业成长创造机会方面发挥重要作用。

3 方法

利用定量研究，并在本研究中确定了 200 个样本量（ $n = 200$ ）。该研究还采用了一系列深度访谈作为数据收集和分析的一部分。多元物流回归用于找出决定阿拉伯联合酋长国旅游零售组织人才管理各个组成部分的独立因素。

4 四. 发现/讨论

以下是关于人才对各种人才管理实践态度的重要研究成果：

a) 工作参与

表 1 显示了认知参与工作的受访者，研究中 200 个样本中有 65% 显示中等到高度的工作投入，而只有 35% 的人才表现出低工作投入。

表 1: 根据工作参与的样本的百分比分布

工作参与	计数	百分比
低	70	35
中	69	34.5
高	61	30.5

b) 培训与发展

关于通过培训和发展提高人力资本的表现能力，表 2 显示，在旅游零售组织中，78% 的受访者在利用培训和发展方面具有中等水平的积极强化。其余 22% 的样本利用低培训和发展参与。

表 2: 根据培训与发展的样本百分比分布

培训与发展	计数	百分比
低	44	22
中	101	50.5
高	55	27.5

c) 工作条件

表 3 列出了影响工作场所的工作环境，表明大多数受访者 70%对旅游零售组织的工作条件有高度的关注。只有 30%的样本对组织的工作条件低度关注。

表 3: 根据工作条件/动机的样本百分比分布

工作条件/动机	计数	百分比
低	60	30.0
中	57	28.5
高	83	41.5

d) 绩效评估

表 4 显示了员工通过绩效评估对组织的贡献的总体评估，通常 64%的受访者的评分中等。根据 26%的受访者表示，绩效评估很低。

表 4: 根据绩效考核的样本百分比分布

效绩考核	计数	百分比
低	51	25.5
中	68	24.0
高	81	40.5

e) 直线经理 - 团队成员关系

表 5 显示，由于大多数受访者表示存在团队合作，80%的受访者认为存在强大的直线经理 - 团队成员关系，可为员工带来积极的增强，20%的少数人认为这种关系较低。

表 5: 根据直线经理 - 团队成员关系的样本的表格百分比分布

直线经理 - 团队成员关系	计数	百分比
低	39	19.5
中	95	47.5
高	66	33.0

使用多元 Logistic 回归

考虑到多元 logistic 回归分析表明，就高参与度，培训和发展，工作条件，绩效评估，货币收益和直线经理-团队成员关系而言，不同决定因素（赔率结果数大于 1）的可能性有多大。

表 6: 高工作投入的决定因素 (多变量逻辑回归)

		Beta	标准差	相关性	比值
性别 (男性 R)	女性	2.08	0.62	0.001	8.01
年龄 (30 R)	<=30	3.25	0.78	0.000	25.83
条件 (低于学历 R)	其他	1.90	0.62	0.002	6.69
称谓 (销售助理, R)	其他	1.24	0.61	0.041	3.45
经验 (>=5 年 R)	<5 年	3.07	0.73	0.000	21.59
月收入 (<3000R)	3000-5000	2.42	0.70	0.001	11.29
	>5000	1.69	0.77	0.028	5.41
国籍 (菲律宾 R)	印度	-0.09	0.80	0.915	0.92
	其他	1.28	0.53	0.016	3.61
婚姻状况 (已婚 R)	单身	0.34	0.56	0.543	1.41
子女数量 (无 R)	无	1.22	0.79	0.122	3.38
	1-2	0.21	0.84	0.802	1.23

表 6 结果表明了一个有趣的数据，旅行零售组织中的员工性别对工作投入有显著影响 ($p < 0.01$)。这意味着，就该组织的男性员工而言，女性人才在工作场所表现出更多的参与。优势比 (8.01) 表明，女性员工的工作投入高于男性员工的 8 倍。

雇员的年龄 (尤其是那些不到 30 岁) 也对高工作投入产生了显著影响 ($p < 0.01$)，从比值比可以看出，小于或等于 30 岁的雇员有 26 比那些 30 岁以上的工作更多的工作投入。同样，从表中还可以看出，具有本科及以上学历 ($p < 0.01$) 的员工对于那些资格低于相应学位资格的人员的工作投入高达 7 倍。

旅行零售组织中处于监督和管理层面的员工 ($p < 0.05$) 比销售助理的工作涉及面多 3 倍。再次从表格中可以看出，具有 5 年以上工作经验的受访者 ($p < 0.01$) 的工作参与度高 22 倍，这一点与 5 年以下工作经验的工作人员有关。

对于每月收入低于 AED3000 的员工，发现每月收入介于 AED3000-AED5000 ($p < 0.01$) 和大于 AED5000 ($p < 0.05$) 之间的员工拥有 11 倍的高收入工作投入和 5 倍高度参与他们的工作。从表格中可以清楚地看到，在受访者中，来自摩洛哥，海湾合作委员会国家，肯尼亚等国家的员工 ($p < 0.05$) 比印度人和菲律宾人的工作投入多出 4 倍。

另一方面，表格数据显示，员工的婚姻状况 ($p > 0.05$) 和家属人数 ($p > 0.05$) 不会对旅游零售组织员工的工作投入产生重大影响。

表 7: 高度训练和发展的决定因素 (多变量逻辑回归)

		Beta	标准差	相关性	比值
性别 (女性 R)	男性	0.04	0.47	0.925	1.05
年龄 (.30R)	<=30	0.01	0.49	0.984	1.01
条件 (学历及以上 R)	低于学历	1.95	0.43	0.000	7.02
称谓 (其他 R)	销售助理	0.22	0.59	0.706	1.25
经验 (>=5 年 R)	<5 年	1.50	0.54	0.005	4.49
月收入 (<3000R)	3000-5000	0.41	0.48	0.401	1.50
	>5000	0.19	0.61	0.759	1.20
国籍 (菲律宾 R)	印度	-0.54	0.57	0.339	0.58
	其他	0.88	0.45	0.052	2.41
婚姻状况 (已婚 R)	单身	0.64	0.51	0.21	1.89
子女数量 (无 R)	1-2	0.37	0.44	0.41	1.44
	>=3	0.41	0.61	0.504	1.51

从表 7 可以看出，旅行零售企业员工的性别和年龄对组织的培训和发展没有显著影响 ($p > 0.05$, $p > 0.05$)。在资格低于学位要求或资格标准 ($p < 0.01$) 的组织中，正在接受培训和发展培训的员工比受过高等教育的学员的学历要高出标准。

从表中可以推断出，在旅游零售机构学习的受访者中，那些工作经验少于5年（ $p < 0.01$ ）的受访者的培训和发展比那些大于或等于5年的经验。从表中可以清楚地看出，雇员的名称，月收入，国籍，婚姻状况和家属人数（ $p > 0.05$ ）对组织的培训和发展没有任何重大影响。

表 8: 高工作条件的决定因素（多变量逻辑回归）

		Beta	标准差	相关性	比值
性别 (男性 R)	女性	1.17	0.44	0.007	3.23
年龄 (.30R)	<=30	0.34	0.44	0.449	1.40
条件 (低于学历 R)	学历及以上	1.00	0.44	0.023	2.72
称谓 (其他 R)	销售助理	2.14	0.67	0.001	8.47
经验 (>=5 年 R)	<5 年	1.97	0.46	0.000	7.19
月收入 (<3000R)	3000-5000	0.17	0.50	0.732	1.19
	>5000	0.77	0.56	0.173	2.15
国籍 (其他 R)	菲律宾	1.40	0.51	0.006	4.05
	印度	0.99	0.61	0.102	2.70
婚姻状况 (已婚 R)	单身	0.70	0.44	0.116	2.01
子女数量 (无 R)	无	0.37	0.54	0.493	1.45
	1-2	0.03	0.57	0.954	1.03

给定表格的值表明旅行零售机构雇员的性别对实体的工作条件有重大影响。这表明女性工作人员（ $p < 0.01$ ）认为工作条件比男性工作者激励和士气提高3倍。对于持有学士学位及以上（ $p < 0.05$ ）的组织中的员工，工作条件积极强化，比学位持有者低2倍。

管理层和监督层的人才销售助理 ($p < 0.01$) 对工作条件积极强化了 8 次。与具有不到 5 年经验的受访者相比，具有 5 年以上组织经验的人 ($p < 0.01$) 对其工作条件的意见高 7 倍。

该表显示，与其他国家的旅游零售组织相比，菲律宾员工 ($p < 0.01$) 对其工作条件的意见高 4 倍。从整体角度来看，从表中可以清楚地看出，其他变量如受访者的年龄，月收入，婚姻状况和家属人数等对组织的工作条件没有任何影响。 ($P > 0.05$)

表 9: 高绩效评估的决定因素 (多变量逻辑回归)

		Beta	标准差	相关性	比值
性别 (女性 R)	男性	0.33	0.39	0.397	1.39
年龄 (.30R)	<=30	0.65	0.40	0.102	1.92
条件 (低于学历 R)	学历及以上	0.08	0.38	0.824	1.09
称谓 (其他 R)	其他	0.05	0.46	0.916	1.05
经验 (>=5 年 R)	<5 年	0.63	0.41	0.121	1.88
月收入 (<3000R)	3000-5000	0.23	0.43	0.596	1.26
	>5000	1.01	0.51	0.050	2.74
国籍 (其他 R)	菲律宾	0.53	0.41	0.193	1.71
	印度	-0.05	0.52	0.927	0.95
婚姻状况 (已婚 R)	单身	0.08	0.39	0.847	1.08
子女数量 (无 R)	1-2	0.51	0.37	0.164	1.66
	>=3	0.61	0.52	0.244	0.55

该表显示，月收入大于 AED5000 ($p < 0.05$)，雇员性别，年龄，资格，名称，经历，国籍，婚姻状况和家属人数 ($p > 0.05$) 的旅游零售机构雇员对组织中人才的绩效评估没有显著影响。

表 10: 直线经理-团队成员关系的决定因素 (多元逻辑回归)

		Beta	标准差	相关性	比值
性别 (男性 R)	女性	0.07	0.41	0.864	1.07
年龄 (.30R)	<=30	0.85	0.39	0.032	2.33
条件 (低于学历 R)	学历及以上	0.51	0.40	0.209	1.66
称谓 (其他 R)	销售助理	0.68	0.54	0.207	1.98
经验 (>=5 年 R)	<5 年	0.43	0.42	0.309	1.53
月收入 (<3000R)	3000-5000	0.54	0.47	0.253	1.72
	>5000	0.51	0.54	0.348	1.66
国籍 (其他 R)	菲律宾	0.07	0.43	0.861	1.08
	印度	-0.12	0.54	0.829	0.89
婚姻状况 (已婚 R)	单身	0.05	0.40	0.895	1.05
子女数量	1-2	-0.27	0.39	0.500	0.77
(无 R)	>=3	0.38	0.49	0.437	1.46

表格值显示受访者的年龄对旅行零售组织的直线经理团队成员关系有重大影响。参照男性同行，女性同行 ($p < 0.05$)，具有 2 倍的直线经理团队成员关系水平。从表中可以推断，其他社会人口变量，如人才的性别，他们的资格，职称，经历，月收入，国籍，婚姻状况和家属人数对于直线经理-团队成员没有任何重大影响组织中员工的关系 ($p > 0.05$)。

5 总结和结论

主要发现指出，参与该研究的旅游零售机构采用传统的人才管理方法。组织因素被发现是高度激励和鼓舞士气的。那些具有 5 年以上经验的人比经验超过 5 年的人具有 4 倍以上的培训和发展投入。对于年龄 > 30 岁，符合资格标准及以上并且具有 > 5 年以上经验的员工而言，集团动态是显著的。30 岁以上员工的工作条件显着较高。在满足资格标准的人群中，绩效评估被认为是非常重要的，而社会人口变量和他们对动机和工作投入的态度没有显着关系。提出了促进组织有效性，领导有效性和绩效管理的战略性人才规划，以提高人力资源能力。

为了在全球最大的旅游零售商组织中拥有可持续的人力资本，我们提出了以下建议：A) 清楚了解组织当前和未来的业务战略；B) 确定人才与人才之间的关键差距 C) 完善的人才管理计划，旨在弥补人才缺口并与战略和业务计划相结合。此外，发展人才以提高当前职位的表现并提高向下一级过渡的准备程度。重点不在于人才战略本身，而在于成功执行所需的要素，以便继续发展团队协同作用，业务影响力和员工效率。

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Part 2 Sectoral Analysis

M 村镇银行经营绩效影响因素研究 - 基于山东省的调研数据

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Abstract

村镇银行等新型农村金融机构在较大程度上肩负着新一轮农村金融改革成败与否的政策使命，但发展过程中依然面临较多问题，其市场定位、发展理念、治理结构、经营绩效与影响因素等命题亟待有效破解。本文基于山东省部分村镇银行的调研数据，在对村镇银行发展态势进行分析的基础上，构建了经营绩效评价模型并对绩效影响因素进行了实证研究。结果显示，村镇银行经营绩效与农户贷款行为相冲突；适当提升资产负债率有助于村镇银行改善经营绩效；人才素质是影响村镇银行发展的重要因素；县域经济发展水平较低（高）的地区，村镇银行综合经营绩效反而相对较好（差）。最后，根据研究结果提出了对策建议。

Keywords: 关键词: 村镇银行 绩效评价 影响因素

1 一、引言

金融抑制与金融排斥现象，使我国农村金融市场变革始终具有强烈的内在需求与政策创新动力。面对新的农村经济形势，基于有效增加农村金融供给、提升金融效率的目标追求，银监会于 2006 年 12 月发布了《关于调整放宽农村地区银行业金融机构准入政策，更好支持社会主义新农村建设的若干意见》，并在随后较短时间内出台了一系列配套的农村金融改革政策，宣告农村金融新政的正式实施。推进村镇银行等新型农村金融机构的设立与发展是本轮改革的核心内容。新型农村金融机构的产生是农村金融系统长期演化的结果，是多年来农村金融供给匮乏与“三农”发展对金融资源的大量需求之间矛盾发展的必然产物。在政策推动与市场需求的的双重作用下，村镇银行得以快速发展。截至 2014 年末，全国已有 1207 家法人村镇银行营业，银行网点达 3080 家，新型农村金融机构已从介入初期的“鲶鱼效应”逐渐凸显农村金融市场生力军的作用。但实践证明，村镇银行经营过程中依然面临较多问题，其市场定位、发展理念、治理结构、经营绩效与影响因素等命题亟待有效破解，创新与可持续发展令人关注。

伴随着村镇银行等新型农村金融机构的快速发展，国内相关研究也不断丰富，主要集中在制度绩效、展业的问题与对策、市场定位、信用风险以及组织创新的路径等方面（柳松，刘春涛，2009）。鉴于实证数据缺乏等原因，对新型农村金融机构绩效评价的研究尚处于起步阶段（赵丙奇，杨丽娜，2013），但也有学者在这方面做出了富有价值的努力，对村镇银行等新型农村金融机构的经营效率、绩效评价及绩效影响因素等方面进行了研究。吴少新等（2009）对村镇银行的经营效率进行了研究，认为目前我国村镇银行的整体经营效率参差不齐，经营效率受资本实力、存款规模、主营业务盈利能力等方面的影响。吴玉宇（2010）就社会网络对村镇银行的经营绩效影响进行了研究，结果认为社会网络经中间途径的传导对村镇银行经营绩效具有正向影响。马小茜（2011）从股权结构、资产规模、资产结构、资产安全性、利润结构等五个方面分析了村镇银行绩效的影响因素。葛永波等（2011）对新型农村金融机构可持续发展的影响因素进行了实证研究，认为产品与服务创新水平、是员工素质等因素对其发展具有重要影响。李建华和何莎莎（2012）以湖北省为例，就支付结算渠道对村镇银行经营绩效的影响进行了研究。赵丙奇、杨丽娜（2013）在构建衡量村镇银行运行绩效的评估框架的基础上，从自我持续性、覆盖面和社会影响力等方面对样本村镇银行的绩效进行评价。董晓林等（2014）对村镇银行设立选址、主发起人类型与经营绩效之间的关系进行了实证研究，并认为以上两个方面对经营绩效均有显著影响。

国外理论界对小型金融机构（社区银行）绩效评价及可持续发展等方面都做出了较为深入的研究，并且正努力探索能够在全世界范围内使用的小额信贷绩效标准（

赵炳奇, 杨丽娜 2013)。例如 Albert 等 (2011) 通过构建特殊的面板模型对社区银行绩效的洲际差异进行了研究, 结果表明地区的经济特征、人口结构以及市场结构等因素均对社区银行等小型金融机构的经营绩效有显著影响。Kashian & Tao (2014) 对社区银行的表外业务与经营绩效、风险等问题进行了深入研究。

山东省是中国的经济大省, 也是农业大省, 农村经济与农村金融发展在全国具有较强的代表性。截止 2014 年末, 山东省内设立的村镇银行达 86 家, 居全国首位 (同期全国平均水平仅 39 家)。本文在对全国村镇银行基本发展状况进行分析的基础上, 利用山东省内 14 家村镇银行的调研数据构建了村镇银行经营绩效评价模型, 并对绩效影响因素进行了实证研究, 具有较强的代表性与现实意义。

2 二、村镇银行发展态势及存在的主要问题

2.1 村镇银行发展概况

随着我国农村金融新政的实施，2007年2月首家村镇银行获准成立。在历经前三年的缓慢发展期之后，近几年来村镇银行进入一个迅速发展的阶段。从数量上看，截至2010年末，全国批准设立的法人村镇银行仅为285家，而到2014年末法人数量达到1207家，平均每年增加230家；从贷款规模上看，2010年末全国村镇银行发放贷款总额约为597亿元，而到2014年末该指标达4862亿元，期间发放贷款的数量平均每年增加1000余亿元；从贷款去向看，截至2014年末村镇银行为农户和小微企业发放的贷款余额合计为4516亿元，占各项贷款余额的92.9%；从吸收民间资本角度看，已有4000余家企业股东和8000余名自然人股东投资村镇银行，成为民间资本投资银行业的重要渠道。

山东省内村镇银行的设立时间较晚，2008年11月首家村镇银行—寿光张农商村镇银行才挂牌开业。2010年末村镇银行的数量仅为9家，低于全国各省平均水平，处于领先地位的江苏和浙江两省同期村镇银行的数量均达19家，山东省村镇银行发展明显滞后。但2011年之后，山东省内村镇银行的发展速度明显提高。2014年末山东省内设立的村镇银行已达86家，居全国首位，而同期全国平均水平仅为39家，江浙两省分别为67家和71家；从贷款额看，2010年末山东省内村镇银行发放贷款总额为19亿元，接近同期全国各省平均水平19.3亿元。之后几年迅速增长，2013年末省内村镇银行发放贷款总额达191亿元（其中涉农贷款余额170亿元，占比89%），期间年均增长速度约为116%，而同期全国平均水平为118亿元，年均增长速度约为83%，江浙两省年均增长速度分别约为76%和53%。

2.2 村镇银行发展过程中存在的主要问题

1 村镇银行布局不均衡，与政策初衷相背离

截至2014年末，全国共有3080家村镇银行网点（含分支机构，其中法人机构1207家）相继营业，但各地区之间的差异较大。网点数量最多的河南省达251家，其次浙江、山东两省分别有225家和217家，辽宁、广西、四川、江苏、广东和安徽等省的网点数量均在159家以上。上述九个省区村镇银行网点占全国总数的近60%，而同期西藏和青海境内的村镇银行分别只有1家和2家，各省之间差距较大，分布极不均衡。

按照全国东、中、西部区域进行统计，东部省份村镇银行网点为 1235 家，占比 40%，中部地区村镇银行数量为 906 家，占比 29%，西部地区数量为 939 家，占比 31%。可见，经济发达的东部沿海地区村镇银行占比较大，而经济发展落后的西部地区村镇银行数量偏少。

从国家贫困县的角度分析，目前国家级贫困县共 592 个，且主要集中在中西部地区。在所有省份中，贫困县最多的云南省有 73 个，占比 12.3%，其次是贵州和陕西各 50 个，占比均为 8.4%。但相应省份村镇银行网点的布局状况是：云南省 67 家，占比 2.2%，贵州省 105 家，占比 3.4%，陕西省 22 家，占比 0.71%，进一步验证了村镇银行不愿设立在偏远与经济落后地区的事实，与国家设立村镇银行政策初衷存在背离现象。

2 股权设置掣肘于政策，治理结构与治理机制有待优化

银监会从制度上要求村镇银行最大股东或惟一股东必须是银行业金融机构。虽然 2012 年以来要求主发起行持股最低比例由 20% 降至 15%，但在调查中发现，绝大部分主发起行的持股比例均在 50% 以上，其他股东持股比例较小。

银行业金融机构发起设立村镇银行固然在经营经验、产品设计、技术与人才支持等方面可以帮助村镇银行迅速开展业务，避免村镇银行操作经验不足导致的风险，但实践中主发起行持股比例过高，必然导致村镇银行的法人治理模式天然地成为维护银行业金融机构利益的硬性制度安排（王健安，2010），制约了村镇银行股权结构优化与治理结构的完善，并影响村镇银行在后续业务发展过程中内生性激励机制的形成。首先，对于主发起行而言，鉴于目前农村金融市场经营环境的制约，追求利润最大化的商业银行设立村镇银行的热情与动力不足。发起设立村镇银行主要是基于战略意图而进行的市场布局与长期规划，如果因持股比较低而无法对村镇银行施之绝对性控制，该效应将大打折扣，并因此导致明显的“一股独大”现象。其次，主发起行持股比例高启，导致事实上的“内部人控制”，股东相互制衡机制弱化甚至缺失，银行治理效率及中小股东利益保障机制有待提高与完善。第三，村镇银行股权比例的政策要求与主发起行的股权设置倾向导致农村民间资本对村镇银行的介入程度受到影响，大大减弱了民间资本与村镇银行之间的互融性与共生性，不仅限制了民间资本的投资渠道，还直接影响到村镇银行业务拓展过程中股东客户及其关系群体的潜在性激励与业务贡献。另外，股权的高度集中使参股股东难以有效发挥其内在职能，导致民间资本失去注资且参与治理的积极性。第四，“一股独大”的股权结构使许多村镇银行沦为发起行的

分支行，经营目标与经营政策受主发起行的直接影响，甚至一定程度上违背了村镇银行服务“三农”的设立初衷。

3 政策扶持力度不强，村镇银行发展需更多助力

近年来，国家逐步出台了一系列扶持与优惠政策，较好地奠定了村镇银行等新型农村金融机构健康发展的基础。但整体而言，村镇银行尚属发展初期，规模小、竞争实力弱，且肩负着改善农村金融市场环境、推进普惠金融发展的历史使命，要想将其打造成农村金融市场的中坚力量，政策支持与执行力度尚显不足。例如，农村金融新政实施的前三年，针对新型农村金融机构的财政扶持及税收优惠政策未及时到位，影响了村镇银行的快速发展，导致村镇银行数量、规模与预期目标相比有较大差距；2010年制定了财政对村镇银行等农村金融机构实行定向费用补贴政策，但达不到规定条件无法获得该项补贴，难以全面、有效地实现“扶弱帮困，公平竞争”的政策目标，况且补贴资金纳入金融机构收入核算，对应的所得税征收使政策扶持力度大打折扣；2009年以来央行将支农再贷款对象扩展至村镇银行，但并未实施具有针对性的倾斜政策，资产规模较小的村镇银行使用支农再贷款额度受到较大限制；针对25%的所得税税率，只明确了“对金融机构农户小额贷款利息收入在计算应纳税所得额时，按90%计入收入总额”，无其他所得税优惠措施等。

4. 农村金融生态环境不完善，村镇银行发展面临困境

一是农村信用环境体系建设较为滞后，农户和农村企业的征信体系不健全，村镇银行面对的客户缺少全面的信用记录，并且农村居民对信用的重视程度不够，信用意识较弱。二是农户普遍缺乏可用于抵押的资产，土地承包权、使用权流转等交易市场尚待建立与完善，农户联保机制存在固有缺陷、违约执行较为困难。三是农业保险体系尚不健全，村镇银行涉农金融服务面临的风险较大。

5. 村镇银行自身存在较多问题，影响可持续健康发展

首先，融资渠道狭窄，吸储困难，业务拓展受限。究其原因，一是品牌的社会认知度低，竞争实力弱；二是成立时间短，营业网点较少，农村客户期望的便利性不足；三是按照政策要求，村镇银行往往设立于经济发展水平不高的县域及村镇地区，民间资金少，农民存款额度有限。

其次，业务服务水平较低，创新能力不足。虽然近年来村镇银行服务水准有了较大改观，有些村镇银行已开展网上银行及银行卡业务、设置 pos 机等基础性设施，但整体而言，金融产品种类依旧较少，业务较为单一，服务深度与广度明显不足。目前村镇银行开展的业务主要以传统存贷款业务为主，代理、理财、信息咨询等中间业务发展较为滞后，且业务创新能力较低，不能及时推出贴近客户、体现特色的个性化产品，难以有效满足农村客户不断发展的多元化金融需求。

第三，专业人才匮乏成为制约村镇银行长远发展的瓶颈。首先，专业人才数量较少，具备金融机构管理与从业经验或者金融专业知识的优秀人才比例较低，且许多员工缺乏对农村金融环境与特点的了解与把握，难以满足村镇银行业务发展的需要；其次，鉴于村镇银行的经营区域及当前的品牌效应与运行机制，对优秀人才的吸引力明显不足，人才梯队建设存在较大困难。

第四，风险控制体系不健全。从实践运行看，村镇银行在风险评估与预警等方面，主要依赖定性评价，大多依靠传统的经验和简单的技术方法，对风险把控缺乏前瞻性、针对性与有效性。另外，村镇银行的治理结构较为简单，容易引发道德风险与操作风险。尤其是当前村镇银行员工综合素质不高，风险意识差且缺乏风险管理经验，潜在的经营风险更值得关注。

3 三、村镇银行经营绩效评价模型构建：基于山东省的调研数据

3.1 研究样本与绩效指标

我们对山东省内截至 2013 年末成立 1 年以上的 20 家法人村镇银行进行了调查，其中实地调研 11 家，发放问卷 9 家。鉴于资料的保密性及其他原因，最后收集到有效问卷 14 家。这 14 家村镇银行分布在青岛、潍坊、济南、莱芜、济宁等地，涵盖了山东省东中西三个区域，具有较强的代表性。

借鉴贾海涛等（2009）、马小茜（2011）等文献的研究思路，结合村镇银行自身特点，本文将其经营绩效指标划分为盈利性、安全性、流动性和发展能力四个类别。其中盈利性指标往往用净资产收益率（净利润与净资产之比）、收入利润率（净利润与总收入的比率）、总资产收益率（净利润与总资产的比率）以及收入成本比（营业收入/营业成本）衡量，安全性指标包括不良贷款率（不良贷款占贷款余额比率）、自有资本率（自有资本与总资本的比率）和资本充足率等，流动性指标包括存贷比率（贷款总额与存款总额的比率）和流动比率（流动资产与流动负债之比）等，发展性指标常采用贷款增长率（贷款增长额占上年度贷款余额比率）、利润增长率（利润增长额与上年度利润额的比值）和总资产增长率（本年资产增长额/去年末资产总额）衡量。

3.2 村镇银行经营绩效的描述性统计

我们对所调查的村镇银行 2011-2013 年的相关数据进行了整理，并对 16 家上市商业银行对应数据进行了统计比较，观察村镇银行的经营绩效。相关指标数据参见表 1。

表 1: 村镇银行经营绩效的各项指标水平

			2011	2012	2013
盈利性指标	净资产收益率	村镇银行	-3.27%	3.44%	7.70%
		商业银行	20.68%	20.52%	19.77%
	收入利润率	村镇银行	-143.91%	22.44%	25.37%
		商业银行	39.66%	39.88%	39.37%
	总资产收益率	村镇银行	-1.28%	1.00%	1.39%
		商业银行	1.21%	1.22%	1.20%
安全性指标	不良贷款率	村镇银行	0.00%	0.00%	0.23%
		商业银行	0.76%	0.81%	0.90%
	资本充足率	村镇银行	46.68%	49.08%	36.99%
		商业银行	12.42%	12.87%	11.5%
流动性指标	流动比率	村镇银行	92.95%	87.54%	94.45%
		商业银行	42.22%	42.38%	40.60%
	存贷比率	村镇银行	65.76%	84.53%	70.06%
		商业银行	68.35%	68.39%	68.52%
发展性指标	贷款增长率	村镇银行	-	387.51%	106.11%
		商业银行	18.09%	16.82%	14.38%
	利润增长率	村镇银行	-	391.61%	285.00%
		商业银行	38.71%	23.62%	15.01%
	总资产增长率	村镇银行	-	93.76%	100.11%
		商业银行	22.60%	21.79%	14.30%

Source: Own calculation.

1.盈利性指标

首先,从村镇银行自身三项收益率指标看,样本均值均逐年上升,且增长速度较快。一方面说明村镇银行的资金使用效率和获利能力正稳步提高,另一方面也体现出国家对村镇银行的扶持效果逐渐显现或有所提高。2011年村镇银行三项收益率指标均为负,体现出村镇银行成立初期获益非常困难。进一步分析还发现,成立时间长的村镇银行的收益率水平明显高于成立时间短的村镇银行。

其次,对村镇银行和上市商业银行的收益水平进行比较可以看到,除2013年总资产收益率指标外,村镇银行的各项收益率水平均远远低于商业银行,体现出村镇银行的经营环境与面临的问题。但村镇银行收益率增长速度较快,与上市银行的差距有逐步缩小的趋势。

2.安全性指标

数据显示,样本村镇银行的不良贷款率很低,2011年和2012年均未出现不良贷款,而2013年只有两家样本村镇银行发生了不良贷款,且均值明显低于商业银行的不良贷款水平。主要原因可能是村镇银行成立时间较短,发放贷款相对较少且不良贷款尚未充分反映。另一方面也在一定程度上体现了村镇银行自身经营尚比较稳定,坚持了审慎经营的原则。

村镇银行的资本充足率远远高于巴塞尔协议要求的8%的标准,且明显高于上市银行平均水平,资本充足性良好,从这个角度看具有较强的风险抵御能力。进一步分析发现,村镇银行的资本充足率呈现递减趋势,主要原因是村镇银行不断增加贷款发放,风险资产相应增加所致,这与观察到的村镇银行存贷比逐渐提高相吻合。可以预计,随着村镇银行盈利能力的不断增强,短期内出现资本充足率不足的概率较小。

3.流动性指标

2011-2013年村镇银行流动比率均值分别为92.95%、87.54%和94.45%,变化不大。对比上市银行,村镇银行的流动比率明显较高,短期偿债压力较小,但在某种程度上意味着资产运用并不充分,盈利能力受到影响。

村镇银行2011-2013年存贷比均值分别为65.76%、84.53%、70.06%,年度波动较大,且不同村镇银行之间存贷比差距更加明显。以2013年为例,存贷比最小值为25.74%,最大值为163.24%,其中3家存贷比超过了100%,5家存贷比低于60%,说明村镇银行业务开展差异较大,部分村镇银行存贷比结构不合理,应

注重流动性风险控制与贷款业务扩张的均衡性。出于对“三农”的支持，相关政策对村镇银行存贷比要求较为宽松，要求其 5 年内逐步达标，一定程度上导致村镇银行存贷结构差异较大。长远看，对村镇银行存贷比应确定一个合理标准，进行更加规范有效的管理。

4.发展能力指标

从比较的角度看，村镇银行的贷款增长率及利润增长率均远远超过商业银行。从自身变化趋势看，村镇银行的这两项指标均有下降趋稳之势。村镇银行较高的贷款增长率及利润增长率一方面反映村镇银行正处于业务的飞速发展阶段，同时也意味着村镇银行处于成立初期，作为比较标准的期初基数较低，导致贷款增长率及利润增长率较高。从实践看，后者的解释力更强。

3.3 村镇银行综合绩效模型构建

在对村镇银行综合绩效评价模型进行构建时，我们遵循系统性、科学性、可比性、可行性等原则，利用较为成熟的因子分析法完成。依据评价体系构建原则，选取盈利性、流动性、安全性、发展能力四类指标作为评价内容。衡量盈利性的指标包括净资产收益率、收入利润率和收入成本比，衡量流动性的指标包括流动比率和存贷比率，衡量安全性的指标包括自有资本率和资本充足率，总资产增长率作为衡量发展性的指标。

1.指标数据的处理

指标体系一般存在三类不同方向性的指标：正指标、负指标和区间指标，为了排除方向性因素对研究的影响，需先对指标进行同向化处理，将三类指标统一转化为正指标，即指标越大反映的经营绩效越好。本研究指标体系中的 8 个指标除存贷比是区间指标外，其他全为正指标，因此只需将区间指标转化为正指标即可。

存贷比不宜过大也不宜过小，存贷比率过低，意味着银行的贷款相对存款偏少，导致银行收入少、成本高，盈利能力差。相反，如果存贷比率高，银行的流动性风险偏高，甚至面临挤兑与支付危机。我国规定商业银行的存贷比不应超过 75%，因此可将存贷比与参照标准 75% 的差距作为衡量标准，差距越小则说明指标越好，即进行的处理。

首先运用 SPSS 20.0 软件，采用样本系数矩阵、KMO 检验及 Bartlett 球形检验方法对样本是否适合进行因子分析进行检验。检验结果均表明研究适宜进行有意义的因子分析。

其次，对样本数据进行因子分析，结果表明前 4 个公因子对样本方差的累计解释达到了 81.15%，选取的 4 个公因子对样本村镇银行的绩效状况具有较好的解释力。因子 1 的解释度最强，达到 31.96%，因子 2、因子 3 和因子 4 的解释度分别为 19.12%，15.51% 和 14.49%。由此，原来的 8 个指标降维为 4 个因子，且已经包含了大部分经营绩效信息。因子的碎石图也显示，前 4 个因子的特征根普遍较高，连接成了陡峭的折线，而第 4 个因子之后的特征根普遍较低，且连接成了平缓的折线，进一步表明提取 4 个因子进行研究比较适当。

再次，利用最大方差正交旋转法将因子载荷阵进行旋转，获得旋转后的因子载荷矩阵。经过旋转后的载荷系数已明显两极分化。第一个公共因子在指标、
、
上有较大载荷，即因子对这 3 个变量影响较大，根据变量的含义可将因子定义为盈利因子。在
和
上有较大载荷，可定义为安全与流动性因子。同理
为流动性因子，
为发展能力因子。

表 2: 因子得分系数矩阵

	成分			
	1	2	3	4
X_1	0.345	0.089	0.193	-0.036
X_2	0.237	0.012	-0.074	0.202
X_3	0.358	0.108	-0.242	0.051
X_4	0.209	0.796	0.285	-0.197
X_5	-0.036	0.191	0.861	0.106
X_6	-0.362	-0.044	-0.065	0.308
X_7	-0.075	0.417	-0.116	0.285
X_8	0.121	-0.004	-0.080	-0.837

表 2 给出了因子得分系数矩阵，由此可求得各个因子的得分表达式。在此基础上，以各因子的方差贡献率占四个公因子总方差贡献率的比重作为权重进行加权汇总，可得出各家银行绩效的综合得分 Y ，据此可对村镇银行的综合绩效进行对比评价。

$$Y = (31.96Y_1 + 19.188Y_2 + 15.509Y_3 + 14.493Y_4) / 81.149 \quad (1)$$

本文利用上述结果对样本村镇银行 2011-2013 三年的综合绩效进行了估计评价，得到的对比结果与我们观测到的村镇银行运行状况比较吻合，并且数据还表明，村镇银行的绩效得分有不断增加的趋势，反映村镇银行的经营状况日渐改善。

4 四、村镇银行综合绩效影响因素的实证研究

4.1 模型构建

根据村镇银行的经营特点并考虑到数据的可获得性,本文从涉农状况、资产规模、资本结构、人才素质、区域经济状况等几个方面对村镇银行综合绩效的影响因素进行分析。

以上文(1)式所求得各村镇银行综合绩效得分 Y 值作为因变量,构建模型如下:

$$Y = a + \beta_1 NL + \beta_2 Z + \beta_3 DR + \beta_4 B + \beta_5 C + \beta_6 G + e_i \quad (2)$$

其中, Y 为村镇银行综合绩效得分; NL 为农户贷款累计发生额占比, Z 为总资产(取自然对数), DR 为资产负债率, B 为本科以上学历人员占比, C 为具备银行从业资格人员占比, G 为县域人均GDP(取自然对数); a 为常数项, β_i 为解释变量的回归系数, e_i 为残差项。

4.2 变量选取与说明

我们选择从村镇银行的涉农经营状况、资产规模、资本结构、人才素质、区域经济状况等方面对其综合绩效的影响因素进行分析,主要基于以下几个方面的考虑:

1. 涉农经营状况。村镇银行的兴起与发展是市场内驱力与政策推力双重作用的结果,当然,就目前的态势而言,政府强制性推动特征更加明显。由于我国二元经济结构特征尚未完成本质性改变,村镇银行逐利性与其政策目标之间便会产生一定的矛盾,在当前农村市场环境下难以较好地將盈利最大化与支农支小使命有机兼容。换言之,村镇银行综合绩效与其涉农经营状况可能存在负相关关系。

以往的研究文献往往采用“涉农贷款比率”作为衡量农村金融机构涉农经营状况的指标,但实际调研中我们发现当前大部分村镇银行的涉农贷款比达到或接近100%。究其原因,一方面可能是村镇银行确实较好地贯彻了扎根农村、服务三农的政策使命,另一方面也可能是“涉农贷款比”指标的说服力值得商榷。事实上,涉农贷款不仅包括了农户贷款,还包含了一些涉农的小微企业贷款,在对涉农贷款尤其对涉农小微企业贷款进行界定时缺乏科学、严格的衡量标准。为了克服

指标存在的不足，我们选取“农户贷款累计发生额占比（ NL ）”指标作为衡量涉农状况的标准，可以克服小微企业贷款界定模糊带来的偏差，更加准确地反映村镇银行的支农状况。

2.资产规模。银行业往往存在明显的规模效应，商业银行的经营绩效与资产规模一般呈现为正相关的关系。衡量银行经营规模的指标包括员工数量、总资产额、总负债额、存贷款规模等。在这些可考察的指标中，总资产数额（ Z ）的大小往往更具有代表性，更能反映银行整体运营规模的大小。

3.资本结构。资本结构指所有者权益和债权人权益的比例关系，反映了企业筹资资金的来源构成，适当的资本结构可以降低企业融资成本，提高运营绩效。相对于一般企业，作为经营货币信用业务的银行，其最优资本结构中的债务比相对较高。资产负债率（ DR ）是衡量资本结构的最典型指标，根据传统经验，商业银行最优资本结构的资产负债率往往在 90%左右，资产负债率过低会影响银行的盈利水平，过高的资产负债率则会使银行面临较高的经营风险。

4.人才素质。金融是现代经济的核心，银行业对人才素质的内在要求较高，村镇银行也不例外。建立合理高效的人力资源管理机制、提升员工素质是改善村镇银行绩效状况的重要途径。目前，村镇银行普遍存在人才总量不够，整体素质不高的现象，员工学历水平明显偏低，从业经验较为欠缺。鉴于此，本文选取本科以上学历人员占比（ B ）、具备银行从业资格人员占比（ C ）两个指标来衡量村镇银行人才素质状况。

5.区域经济发展。村镇银行的经营绩效除了内部影响因素之外，区域经济发展等外部因素也会对经营绩效产生直接影响。县域人均 GDP 是衡量区域经济发展水平的一个较为适宜的指标。

上述指标的描述性统计结果参见表 3。可以看到，各年度的农户贷款累计发生额占比（ NL ）均值处于 30-60%之间，各年度及年度内各村镇银行之间的差距均较大。以 2011 年为例，最大值为 94%，最小值为 7%，反映出村镇银行为农户提供贷款业务等金融服务的水平差别很大；村镇银行的平均资产规模有上升趋势，但各银行之间的差距较为明显；三个年度的资产负债率均值分别为 57%、68%和 72%，有逐步上升趋势，但仍有较大的上升空间，尤其是资产负债率较低的村镇银行；人才素质方面，本科以上学历人员占比各年度都在 50%以上，平均学历水平较高，但各银行之间差距较大，最高占比 91%，最低为 30%。具有银行从业资格的人员比例整体偏低，均值为 20%左右；村镇银行所在的各县域人均 GDP 水平差距较为明显，体现出地区之间经济发展程度差异较大。

图 3: 经营绩效影响因素变量的描述性统计

	2011				2012				2013			
	均值	标准差	最小值	最大值	均值	标准差	最小值	最大值	均值	标准差	最小值	最大值
NL %	0.58	0.34	0.07	0.94	0.36	0.03	0.03	0.82	0.31	0.18	0.04	0.56
Z (亿元)	2.67	2.47	0.99	7.54	4.00	3.40	2.31	14.2	7.08	9.08	0.82	37.7
DR %	0.57	0.29	0.14	0.86	0.68	0.11	0.46	0.86	0.72	0.21	0.27	0.92
$B\%$	0.51	0.19	0.38	0.89	0.65	0.18	0.30	0.87	0.72	0.16	0.47	0.91
$C\%$	0.18	0.06	0.12	0.29	0.20	0.04	0.12	0.27	0.21	0.07	0.09	0.32
G (元)	48317	32383	16641	109848	62900	39619	17287	136909	69672	44719	19288	159090

4.3 模型估计与结果分析

应用 Stata12.0 软件对样本数据进行回归分析，结果如表 4 所示。可以看到，样本决定系数 R^2 为 0.6556，修正 R^2 为 0.5696，模型拟合优度良好，而且 F 检验非常显著，这说明相关解释变量对因变量有良好的解释度，回归方程显著。

从各个解释变量看，除了总资产对数 Z 统计值在 10%水平上不显著外，其余均通过显著性检验。总资产指标不显著的原因可能是由于村镇银行处于发展初期，规模经济并未显现。同时，村镇银行业务面向“三农”，客户属性及农村经济特点导致规模经济这一在其他领域普遍存在的特征，或许在农村金融机构身上体现的并不明显。

农户贷款累计发生额占比与村镇银行绩效呈显著负相关关系，反映出注重农户贷款的村镇银行综合经营绩效表现不佳，而经营绩效良好的村镇银行支农状况（主要针对农户贷款）并不理想，支农行为与综合经营绩效相冲突。在缺乏适当政策支持背景下，村镇银行若全心全意服务于农户，会影响自身的经营绩效，如何有效改善这种现状值得关注。

表 4: 综合绩效影响因素的回归结果

变量	系数	t 值	P 值
α	2.445045	2.01	0.056
NL	-.5116132	-3.64	0.002
Z	-.0757414	-1.23	0.231
DR	.7547246	3.04	0.006
B	.3638891	1.95	0.062
C	1.060366	1.82	0.081
G	-.0861783	-1.78	0.088
R^2	0.6556		
AdR^2	0.5696		
F 值	7.62		
$prob > F$	0.0001		

资产负债率与经营绩效显著正相关，表明村镇银行的负债比例越高其综合绩效越好。根据传统经验，商业银行的最优资产负债率约在 90%左右，低于该值时资产负债率的提高可以更好地发挥财务杠杆作用，提升银行的整体绩效，这与村镇银行现状相吻合（样本村镇银行的资产负债率远低于 90%）。

本科以上学历人员占比、具备银行从业资格人员占比的检验结果表明，人才素质是村镇银行绩效的重要影响因素，有效提升员工素质对于促进村镇银行健康发展具有重要意义。

值得关注的是，县域人均 GDP 与村镇银行综合绩效负相关，即当地经济发展水平与村镇银行盈利水平呈反向关系，县域经济发展水平较低（高）的地区，村镇银行综合经营绩效反而相对较好（差）。原因可能是经济发展水平较高的地区往往金融机构众多，商业银行之间的竞争非常激烈，村镇银行起步晚、规模小、竞争实力弱，导致综合经营绩效相对较差。该结果与董晓林等（2014）的研究结论相一致，他们的研究也表明，设立取址对村镇银行的经营绩效有显著影响，经济发达地区村镇银行的经营绩效明显低于经济欠发达地区。这从另一个角度也反映出村镇银行与其他商业银行在经营区域等方面应展开错位竞争，经济欠发达地区金融供给不足，村镇银行发展空间反而更大。

5 五、促进村镇银行健康发展的对策建议

1. 新型农村金融机构先天性地被赋予了化解农村金融市场供需矛盾的责任，村镇银行应将自身的市场定位与农村经济发展相契合，在力求商业可持续发展的基础上追随普惠理念与惠农文化，并使这种思想内化于企业精神，突出自身经营特色，努力实现村镇银行与农民互利，与农业共存，与农村共赢。县域经济发展水平与村镇银行综合绩效负向相关的实证结果表明，扎根于相对落后的农村地区并提供适合当地市场需求的金融产品，有利于发挥村镇银行独特的市场竞争优势，提高村镇银行的综合绩效与可持续发展能力，村镇银行或许可以探索出一条支农扶贫与经济效益共存的经营模式。

2. 按照新制度经济学的企业组织理论，规模经济是企业尤其金融企业的显著特征，但农村经济的特殊属性客观上需求灵活多样的小型金融组织提供特色服务。为此，村镇银行可创新性实施在机构规模合理确定边界基础上的组织创新。金融产业集群思想不应局限于地理位置上的集中与集聚，更需反映管理与经营思想的集中与整合、服务平台的共享及集群内个体间的“学习效应”，因此，村镇银行控股集团或联合机构的创新模式及作用机理就具备了坚实的理论基础。在此模式基础上针对当地农村金融市场需求特点实施产品创新，提供特色化服务，有效开展同业错位竞争，致力于个性化与差异化发展，是村镇银行提升自身竞争力、保持可持续发展的根本方略。

3. 为有效缓解专业人才匮乏、吸引力不足的问题，村镇银行绿色人力资源管理创新势在必行。绿色人力资源管理强调员工的全面成长、协调发展、能动性以及组织的包容性，其目的是实现组织生态位各维度层面以及与外部环境之间关系联结的相对平衡和正常有序，促进组织的可持续发展。村镇银行应结合农村经济社会环境与金融改革趋向，通过倡导与实施绿色人力资源管理战略，树立新的价值观与人才观，在人才引进、综合素质培养、人与组织关系等方面形成协调发展的长效机制，重视员工在企业发展中的主体性地位及创新能力，切实尊重员工的尊严、权利、价值和愿望，增强员工的归属感、荣誉感、成就感、幸福感，从根本上提高银行可持续发展的内在动力。

4. 进一步优化股权结构与资本结构，有效提升村镇银行治理效率及经营绩效。一是村镇银行应降低主发起行持股比例，吸引当地企业与农户投资入股，既能激发县域民间资本参与银行管理的积极性，还可充分利用当地股东资源形成并不断优化业务拓展过程中的内生性激励机制。在这个过程中，主管部门应改革现行设立村镇银行的准入政策，在不断完善监管体系的前提下，逐步放开主发起行的

股权比例及民间资本参股比例要求，鼓励农村民间资本参股村镇银行，有效规避“一股独大”的公司治理弊端，提高村镇银行治理效率与可持续发展能力。二是村镇银行适当提高资产负债率，充分利用财务标杆作用提升经营绩效。调查发现，目前村镇银行的负债水平偏低，尚有较大的上升空间。

5.结合自身特点及农村市场要素禀赋结构与风险特质，构建系统的风险监测与控制体系。村镇银行须借鉴国内外先进的小型金融机构运作经验，通过建立有效的内控制度、完善借款者内生性激励和约束监督机制、创新交易技术等制度安排，降低信贷风险。

6.建立并不断完善村镇银行社会绩效综合评价体系，助力村镇银行健康发展。村镇银行农户贷款行为与经营绩效呈负向相关的实证结果为适度的扶持政策提供了经验证据。政府应致力创造有利于形成合作博弈与公平竞争的外部环境（如建立健全农村征信和农业保险制度体系等），形成化解各种冲突的协调机制，着力构建规范化、效率化的农村金融体系。应从全局角度统筹规划各类金融机构的协调发展，形成有效、公平的村镇银行社会绩效评估体系，客观评价其对促进农村经济发展、增进社会效益等方面做出的综合贡献，使村镇银行以综合价值而不是单纯的经济价值为标杆规范、指导自己的行为。对面向农村金融市场、处于发展初期的小型金融机构，政府应明确合理有效的扶持政策及相应的补偿机制，并成立专门的协调机构将其落实到位，使新型金融组织的价值追求与政府的政策目标有效耦合与对接。同时，监管部门应根据新型农村金融机构的特点，采取有针对性的差异化监管思路，制定实施多层分类监管制度，实现市场激活与风险控制双重目标的有机结合。

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