INNOVATION, GOVERNANCE AND ENTREPRENEURSHIP

How Do They Evolve in Middle Income Countries?

Edited by Sefer Sener
and Stefan Schepers

Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?

Sefer Sener · Stefan Schepers
Editors

Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?

New Concepts, Trends and Challenges

palgrave
macmillan

Editors
Sefer Sener
Istanbul University
Istanbul, Turkey

Stefan Schepers
Henley Business School
Brussels, Belgium

ISBN 978-3-319-55925-4 ISBN 978-3-319-55926-1 (eBook)
DOI 10.1007/978-3-319-55926-1

Library of Congress Control Number: 2017937482

Cover credit: Supapixx/Alamy Stock Photo

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

For my mother, Sehri Sener,
without whose care and support
I would not be who I am
Sefer Sener

For my mother, Germaine Lijnen,
who introduced me to the cultural richness
of Istanbul and Turkey
Stefan Schepers

Contents

List of Figures

Effects of Innovation and Financial Performance on Companies in the Middle Income European Countries

SWOT Analysis of the Turkish Economy in the Context of Innovation from the Perspective of the Business World, Academics and Government Executives: A Comparative Analysis of Middle-Income Countries in Terms of Their Innovation Capacities

List of Tables

Introduction

Sefer Sener and Stefan Schepers

Middle-income countries, like others, need a grand vision regarding the 'common good' that can motivate people; the 'common good' is the ultimate task of an accountable government (Putscher-Riekman et al. 2013). Today, in a time of profound and rapid technological and social change and globalisation, this can only be founded with an innovation paradigm.

Developing an ecosystem of innovations is the overarching objective of middle-income countries in the next decades in order to guarantee and promote the best possible living conditions for the largest number of citizens, as it is in advanced economies (High Level Group on Innovation Policy Management [HLG] 2014). A narrative built on an

S. Sener (✉)
Faculty of Economics, Istanbul University, Istanbul, Turkey
e-mail: sefersener@istanbul.edu.tr

S. Schepers
High Level Group on Innovation Policy Management,
Henley Business School, The University of Reading, Reading, UK
e-mail: stefan.schepers@eppa.com

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_1

innovation paradigm can offer a consensual and attractive new context, integrating national, regional and local interests.

Incremental and radical innovations in markets, society and governance are needed to manage the critical economic and societal issues of middle-income countries in the first half of the twenty-first century, such as the digitalisation of the economy, resource efficiency, climate change, employment creation, healthy living, security of food, energy and resources, and, to make it possible, governance methodology and culture. Innovation is an indispensable source of competitive strength.

However, in many middle-income countries, traditional perceptions of growth and many fault lines hinder the efficient use of the available intellectual capital and economic capabilities. Indeed, economic innovation requires much more than research that may, or may not, lead to a new or improved product or use. Economic innovation also relates to new methods of production or delivery of services, the development of a new market, or finding a new supply source for raw materials or manufactured inputs, new design, or a new way of organising industry, management or public administration. Therefore, a traditional research and development (R&D) approach to innovation, however well-funded, is insufficient and ineffective, and must be broadened to cover non-technological innovations, including in regulatory frameworks, procurement procedures or intellectual property rights and standardisation, to name but a few (Gretschmann and Schepers 2016).

The emergence of novel concepts and products is often a result of improvisation and repeated trial and error until some form of consolidation takes place. Thus, innovation is a paradoxical process, combining the unknown, creativity and rigorous scientific method. It requires the opposite attitude from bureaucracy, which is about stable process and control in large entities; if it comes too early in innovation processes, it leads to inertia. However, beyond 'managed innovation', independent thinkers, amateurs and dreamers often provide the indispensable imaginative leaps, fantasies and intuition that are often more useful than the much-praised 'analytical rigour' when it comes to new ideas and innovations. Attempts to trigger non-conventional thinking in universities,

firms and politics, but also in civil society organisations, are still both greatly desired and a priority.

Moreover, leadership and support in government systems is needed to create the optimal framework conditions to facilitate other actors, primarily but not exclusively companies and universities, to develop and manage the chain of actions that leads to innovation of products, services and processes in the market.

Modern political leadership for innovation requires vision, strategy, consistency, and a proper governance culture and tools. It needs to give attention to the whole chain of knowledge development in its broadest sense, to diffusion and absorption, and to its transformation in tangible applications, which bring economically and socially measurable benefits.

A culture of regulation and control inherited from the industrial age and early modernisation needs to evolve into a culture of mentoring and coaching of all actors and stakeholders. Stewardship tools are more suited to promoting a culture of innovation and change among various actors than traditional command and control approaches, which usually stifle diversity and creativity, two key ingredients for innovative thinking.

Institutional arrangements have a crucial role in driving or at least supporting forces of innovation. Technology innovation and institutional innovation are deeply inter-twined since new inventions, innovations and technologies are frequently the source of disequilibria, which make it profitable or even indispensable to innovate institutional arrangements. North defines institutions as "humanly devised constraints that structure political, economic and social interactions". Constraints, as North describes, are devised as formal rules (constitutions, laws, property rights) and informal restraints (sanctions, taboos, customs, traditions, code of conduct), which usually contribute to the perpetuation of order and safety within a market or society. Briefly stated, his works specify the process by which social, economic or political actors perceive that some new form of systemic organisation (institutional arrangement) will yield a stream of benefits that make it profitable to undergo the costs of innovating this new organisational form. These new arrangements are typically apt to realise potential economies of scale, reduce information costs, spread risk and internalise externalities.

The governments' role in innovation in the highest-ranked innovative countries is more important than often assumed (Mazzucato 2013). Governments will increasingly become involved in technology, investing in a broad range of applications—from home-grown innovation incubators to local manufacturing sites that create jobs and manage geopolitical risk, not to mention dealing with potential ethical or civil rights issues relating to the use of new technologies. At the same time, governments need to adapt their regulatory role to the post-industrial economy and society. It also opens up new possibilities for institutional reform and governance innovation: as the ecosystem of innovations and government policy are becoming increasingly multi-layer, multi-actor and hyper-complex, new modes of governance, citizen participation and transparency will be part of any innovation-promoting regime. This is all the more the case for governments in middle-income countries preparing for the next growth phase in a highly competitive global context.

Innovation results from a complex process, combining curiosity, creativity, rigorous scientific method and a suitable institutional framework of interaction. The emergence of novel concepts or processes, products or services can only result from out-of-the-box thinking, improvisation, trial and error, and new tacit or explicit knowledge (Gretschmann and Schepers 2016).

The traditional model of innovation uses scientific research as the basis of innovation, and suggests that change is linear: from research via invention to innovation, to diffusion and marketing. However, this model is incomplete and misleading. Rather, innovation is a result of the interaction among an 'ecology' of actors. The 'right' interaction between these actors is needed to turn an idea into a solution or process, product or service on the market or in society. Therefore, an innovation strategy needs to focus on connectedness and the dynamics and context in which a complex interaction of actors and agents, factors, sectors and countries determining or hampering innovation is embedded.

The ecosystem model provides a much richer picture of how innovation works, and how it can be stimulated and fostered. It focuses on connectedness—the dynamics and the context in which a complex interaction of actors and agents, factors, sectors and countries that determine or hamper innovation are embedded. Innovation and value

creation require permanent strategic agility (Doz and Kosonen 2014), scanning the global context, scouting for opportunities, and paying attention to continuities or discontinuities in societies and economies.

In this book we suggest that the concept of innovation ecosystems, i.e. a set of ideas, institutions, instruments, policies, regulations and factors that determine the level, direction, outcome, productivity and degree of competitiveness from innovations, should also be used in middle-income countries (Jackson 2011). A realm characterised by clear, simple, efficient, smart, low-complex, competition-based and socially accepted features will be best suited and conducive to prompt and promote innovation. Whereas the traditional linear model of innovation prioritises scientific research as the basis of innovation and suggests that change happens in a successive fashion from research via invention to innovation to diffusion and marketing, the model put forward here provides a much richer picture of the way innovation works and how it can be stimulated and fostered.

The key objectives are to develop and promote an ecosystem of innovation that embeds innovation policies and activities into a flexible, dynamic, stimulating and enabling environment. This ecosystem is intended to create value for society. It should enhance the quality of life for its citizens and the competitiveness of its enterprises. It should foster intelligent interaction between a variety of stakeholders (whether companies, local/regional/national authorities or international systems [Organisation for Economic Co-operation and Development (OECD), etc.]) and centres of knowledge creation such as universities and research organisations.

Reconstructing and unfolding a middle-income country innovation ecosystem has the same requirements as in other countries (HLG on Innovation Policy Management 2013 and 2014). First, it needs creative and bold thinking, free from bureaucratic constraints, that is able to achieve innovative solutions and eventually be capable of addressing new challenges and specific problems.

Because it is certain that at least some enterprises launched in the ecosystem will fail, a healthy ecosystem should be structured to handle failures in a way that encourages cutting investment losses in the early stages. Ideally, it must be structured so that it can recover and recycle

resources (including human capital) that are released upon failure of an enterprise. Therefore, besides assembling the actors who will contribute to the innovation ecosystem, a healthy ecosystem also provides a mechanism for building relationships and other intangibles between the actors and entities within the ecosystem and those both inside and outside the system.

To properly assess paradigm shifts and align various agendas, it is essential to involve business leaders and other economic actors together and in close cooperation with the centres of knowledge creation, to contribute their understanding of markets and marketability. To make use of different perspectives and different modes of thinking and probing, a culture of deliberation and discourse, of transparency and critical creativity needs to be established.

The world is in the midst of a major paradigm shift: the old approach to economic policy no longer works and the new approaches have not matured enough yet. In fact, innovation ecosystems as social environments offering an all-encompassing and coherent policy strategy regarding innovation permeate many other areas, such as enterprise policy, smart regulation, affordable health, social security reforms, etc. Both politics and business need to create and provide the right 'innovation ecology', a laboratory of ideas, rules, procedures, etc., across disciplines, firms and countries. This requires that stakeholders, shareholders, producers, facilitators, decision-makers, knowledge workers, skills providers, etc. all be involved and committed. Then the innovation ecosystem approach may well be the best basis for a new narrative of growth and social well-being in middle-income countries.

Even more than high-income countries, middle-income countries are struggling to move to the next level of economic growth and to ensure that all people benefit from it. Many are trying to copy some of the policies of high-income countries, but they seem to miss other policies and in general do not have the capacities and the contextual conditions to effectively do so.

In this book, the authors argue for an encompassing approach, based on their own research and also inspired by the work of the HLG, which was launched in 2011 by the Polish Presidency of the Council. This independent, tripartite group of experts from the EU Commission and

EU governments, corporations and research was invited to think 'outside the box' about the needs of innovation policy in the EU. It offers a model that could also be useful in middle-income countries.

In the following chapters, the authors deepen this thinking and analysis with a focus on middle-income countries, with Turkey specifically in mind, although much of what they say would be valid, *mutatis mutandis*, for other middle-income countries. The chapters of the book take into account different dimensions of innovation ecosystems, emphasise the problems faced by the middle-income countries and try to propose new policies to help construct a better functioning innovation ecosystem in this group of countries.

Chapter "Innovation Ecosystem Development: A Necessary Instrument to Escape the Mid-Income Trap" investigates the reasons leading to the failure of innovation policies implemented in middle-income countries, which the author of the chapter states do not lead to expected results because of institutional problems and the absence of a system approach. It is argued that an innovation ecosystem is needed in order to avoid the middle-income trap and to reach high-income levels in the middle-income countries.

Chapter "Is Innovation Conducive to Economic Growth? The Case of Central and Eastern European Countries" examines the effect of innovation on economic growth in the Central and Eastern European countries by taking into consideration both the quantity and quality aspects of innovation. This chapter sheds light on whether innovation activities lead to higher economic growth rates in the existing economic, social and institutional structures of the Central and Eastern European countries.

In Chapter "The Dynamic Function of Innovative Entrepreneurship in Evolutionary Economics for Middle-Income Countries", the endogenous dynamics of innovation are analysed and focus is given to innovative entrepreneurship, which is ignored by Neoclassical Economics. This chapter investigates innovative entrepreneurship from the viewpoint of Evolutionary Economics in the context of middle-income countries.

Chapter "Collaborative Governance: Working Through Misaligned Interests" examines collaborative governance, which is an institutional factor affecting the innovation performance of the public and private

sector entities. The authors argue that inadequate attention given to collaborative governance undermines innovative activities and entrepreneurship.

The focus of Chapter "Entrepreneurship and Ethics: Examples of Social Entrepreneurship in Turkey and Selected Middle-Income Countries" is on entrepreneurship ethics and the authors argue that an entrepreneur who achieves individual and social benefits by turning innovations into goods and services will make decisions based on ethical behaviour by acting with social responsibility in the struggle to transfer social resources to future generations in a habitable condition, and thus create values. This chapter investigates social entrepreneurship by providing examples from both Turkey and selected middle-income countries.

Chapter "An Empirical Analysis of the Macroeconomic Dynamics of Innovation" analyses the effects of macroeconomic indicators on innovation activities. Since there is scant evidence in the existing literature with regard to the effects of macroeconomic indicators on the innovation performance of middle-income countries, this chapter fills in this gap by providing new empirical evidence relating to middle-income EU countries.

Chapter "The Importance of Innovation in Small- and Medium-Sized Enterprises: The Turkish Experience" examines the importance of innovation in small- and medium-sized enterprises (SMEs). The author of this chapter conducted a survey of Turkish firms using a questionnaire to find out whether SMEs in Turkey are aware of the importance of innovation. Using the example of Turkish SMEs, new evidence is provided in terms of the perception of innovation in SMEs in the middle-income countries.

The crucial role played by the education system in training students according to the needs of the new economic environment is investigated in Chapter "Designing an Innovative School: Learning Schools, Educational Leadership and School Improvement". The author of the chapter suggests that educational institutions need to be restructured with an innovative and creative approach, educational processes need to be reconstituted and human resources need to be improved.

Chapter "Effects of Innovation and Financial Performance on Companies in the Middle Income European Countries" provides

important evidence on the effects and influence of innovation and financial performance on companies in middle-income European countries by investigating two Turkish companies as a case study and comparing Turkey with other middle-income European companies.

Chapter "SWOT Analysis of the Turkish Economy in the Context of Innovation from the Perspective of the Business World, Academics and Government Executives: A Comparative Analysis of Middle-Income Countries in Terms of Their Innovation Capacities" presents the results of a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis which is performed from data gathered from academics and government executives in Turkey. The SWOT analysis is focused on the innovation capacity of Turkey and offers an insight into the strengths, weaknesses, opportunities and threats against the development of innovation capacity in Turkey.

In a nutshell, this book enlightens the most debated issues relating to the development of innovation capacity and hence gaining competitive advantage in international markets in the context of middle-income countries. By investigating economic, social and institutional aspects of innovation ecosystems and providing new empirical evidence and case studies, the book is a valuable source of information for academics, policy-makers and international organisations such as the OECD, World Bank and United Nations.

References

Doz, Y., & Kosonen, M. (2014). *Building the strategic and agile state*. SITRA Studies.

Gretschmann, K., & Schepers, S. (2016). *Revolutionising EU innovation policy*. London: Palgrave MacMillan.

Jackson, D. J. (2011). *What is an innovation ecosystem?* http://erc-assoc.org/sites/default/files/topics/policy_studies/DJackson_Innovation%20Ecosystem_03-15-11.pdf. Accessed 2015.

Mazzucato, M. (2013). *The entrepreneurial state*. London: Anthem Press.

Putscher-Riekman, S., Somek, A., & Wydra, D. (Eds.). (2013). *Is there a European common good?* Baden-Baden: Nomos Publishers.

Innovation Ecosystem Development: A Necessary Instrument to Escape the Mid-Income Trap

Stefan Schepers

Introduction

Successful economies, those ranked at the top of global competitiveness, show that coherent and overarching innovations in an economy, society and governance can ensure a revival of economic and societal dynamism. These countries placed innovation as their top priority and steered a decade of research and innovation of all framework conditions, the key inter-dependent elements that determine successful economies and societies.

In contrast, many mid-income countries today are stagnating, after a decade or two of economic growth, and losing competitiveness, while social tensions are rising. Which are the ingredients to launch them on the path of new growth and prosperity for their citizens?

S. Schepers (✉)
High Level Group on Innovation Policy Management,
Henley Business School, The University of Reading, Reading, UK
e-mail: stefan.schepers@eppa.com

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_2

A Look in the Mirror

In a famous analysis of the origins of the first world war, the historian Christopher Clark describes how the old order in Europe, including the Russian and Ottoman Empires, collapsed through self-delusion of political elites, economic and military short-sightedness, policy incoherence and ideological propaganda in all major countries (Clark 2012).

These characteristics seem not altogether absent today from many mid-income countries, as is testified by increasing tensions in many countries once thought to be a shining new (liberal and social) democracy, economic stagnation or decline, corporatism and corruption, rising inequality, and societal turbulence as a consequence. Among many others, the principal reason for social upheaval that accompanies the mid-income trap may be that it frustrates the rightful hopes of many citizens for a better tomorrow. Instead of continuing reforms that brought them out of the poverty trap in the first place, governments of many mid-income countries favour the status quo and some even stoke tensions to maintain it. History has shown many times that this is counter-productive.

They fail to see that each level of economic development requires its own systemic reforms and they do not maintain a favourable climate for investments, which in turn leads to higher unemployment, particularly if birth rates are not declining sufficiently. This will also lead to the departure of the best minds, a decline in entrepreneurship, capital flight and decreasing foreign direct investment. According to the World Bank, the mid-income trap has many causes, different by country, but primarily results from a lack of investment in science and technology, education and the development of their own innovation ecosystems (World Bank 2011). These are the result of policy failures—a mid-income trap is homemade.

However, even if these conditions were fulfilled, there are other contextual conditions necessary for the outcomes of research to be transformed into new products and services and for these to reach the market. They are in the first place the rule of law, which together with the independency of the judiciary are two key conditions for citizens

and investors to trust in a political system and for an economically efficient allocation of public resources. Equally important are openness and collaboration with a variety of stakeholders in order to ensure creativity and serendipity in the public debate. Social inclusion has also recently been widely recognised as a key ingredient of successful economic transformation (Stiglitz 2012). Moreover, few companies can rely only on the global market as most need a solid home base too, in particular small- and medium-sized enterprises (SMEs).

This outcome of a successful first phase of economic and social modernisation is not inevitable, though it is an indication that public and corporate governance methods require incremental, and sometimes radical, innovation in order to prepare for and achieve the next leap forward. The so-called mid-income trap is a result of innovation failures: strengths and opportunities available or achievable are under-used or not developed because of a failure of systemic innovation. This requires new concepts and methods of governance in the public and private sectors alike. Contrary to neo-liberal economic theory, the role of government in innovation is crucial (Mazzucato 2013).

Ten years from now, these mid-income countries that progressed so well during the last two decades, partly thanks to intelligent policies and partly to globalisation, may be able to look back on a new era of growth and social progress—a time when rapid and continuous innovation changed almost everything, and for the better: the way people live, produce, consume, communicate and participate fully in their own societies and in the world. Like the word 'progress' a few decades ago, 'innovation' has become a magic word in today's intellectual debates about global competition, job creation and a resource-efficient economy, balanced public budgets, demographic problems, improved education and public health, climate change consequences, and so on. Even more than in countries already top-ranked for competitiveness, innovation should be the first priority of governments in mid-income countries if they ever want to have a chance to narrow the gap. Given that other countries do not stand still, they will have to learn how to leapfrog ahead, a daunting but feasible challenge, as shown by some newcomers in the top leagues of innovation and competitiveness.

Economic and social innovations result not only from research and new technologies, but also from the right framework conditions for their uptake by entrepreneurs and by the people. The ultimate purpose of research is not a publication or a patent, which are often dormant; it should lead to new products or services and new ways of managing or governing to be meaningful. Universities and research centres can play a key role in this (Thoenig 2016). But it also needs self-critical, creative and holistic thinking, free and open interaction between different stakeholders, and cross-fertilisation between sciences. It is not a linear process—it cannot be planned—but it does require continuous attention to the framework conditions for it to flourish, as well as openness to the world (High Level Group [HLG] on Innovation Policy Management 2013).

A pre-condition for sustainable growth and innovation, often overlooked in eager electoral promises, is budgetary discipline, in order to avoid the death-end of debt-financed growth. It has become clear today that productive capacity and national income before the financial crisis was based too much on public and private debt. Coupled with the lack of oversight of the financial sector, which had been liberalised in a naïve belief in market efficiency, it has in fact led to rising inequality and stagnant welfare for a majority of citizens (Jacobs and Mazzucato 2016). Countries with a relatively weaker economy are likely to suffer more from these conceptual and policy failures than others.

The multiple effects of policy decisions often lead to unforeseen consequences and responses: it is usually more comforting for decision-makers to continue to operate with tested concepts and follow regulatory trajectories set out long ago than to experiment with new ones. Foresight and acting upon it is a widespread weakness in the boards and top management of corporations (Mostovicz et al. 2012). Equally, governments can get into serious political, economic and social trouble, which they can temporarily silence, but will erupt all the more disturbingly later.

A re-think of how to manage the complexities of the economy and society effectively is permanently needed. Specifically, there is a need to scrutinise the inter-dependent consequences of fundamental economic

and societal change such as digitalisation and globalisation continuously (Nägele 2015). Together, these shifts urgently require a redesign of policy and systems in order to promote the well-being of people, and to (re-)gain their trust and credibility, also by business.

Therefore, the free operation of the market of ideas is very important, as is an open connection to the flow of ideas globally. Innovation inevitably requires regular, open dialogue and consultation between stakeholders, who in a globalised world are, and need to be, in contact with peer groups elsewhere to remain up-to-date and creative. A country that isolates itself from contemporary communication technologies and the free flow of creativity, and indeed of criticism, which is the complement of creativity, will never catch up to the best performers.

Effective consultation is organised scepticism, which in turn leads to alignment of perspectives and interests. In an innovation process, constructive criticism ensures more effective problem solving. Therefore, experts with different multi-disciplinary and multi-experience backgrounds, and not just from the mid-income country itself, must be involved regularly in providing the inputs necessary for making decisions that are of high quality and socially acceptable. To do this, innovation ecosystems need to be developed.

The key challenge today is how to strategise and manage the complexity of macro-economic policies, including the interdependency with policies by other countries and the potential external effects of a country's own policies; research and technology developments, including potential modernisation of traditional sectors; sector regulatory frameworks that are technology neutral and stimulate resource efficiency; and societal needs, such as education, health, social protection and stakeholder engagement. It is an illusion to think that highly educated citizens in advanced societies with knowledge of the world will behave towards authority like illiterate farmers once did. Their interactive dynamic requires innovative processes to build competitive advantage out of new societal and ecological needs, demands and technological advances, and this requires continuous and transparent dialogue with all stakeholders.

Innovation ecosystem thinking and methodology helps to adapt to the fundamental and irreversible external changes that have become

apparent since the emergence of the fourth industrial revolution, driven by digitalisation. However, one must accept that innovation comes from a paradoxical process, combining the unknown, unconventional creativity, criticism of current conditions (such as climate degradation or inequality) and rigorous scientific method. Bureaucracy, in contrast, is about stable processes and control in large entities; however, the digital era requires the opposite: strategic flexibility, specific leadership skills and new organisational processes. These should not be limited to the business sector if rapid and cumulative effects are to be achieved: they must equally penetrate universities and research centres and government at all levels, from municipal to state.

It is by considering the limitations of current approaches in new contexts, but also by extracting successful elements of current approaches, that a new, competitive and socially accepted economic architecture can emerge. Thus, it must be part of a culture of innovation to accept experiments and managed risk in order to allow a widening and diversification of innovative products, services or processes and their application. Innovation demands a departure from a legalistic culture of power preservation towards a cooperative and result-oriented culture.

Mid-income countries are not lacking in capacity but they do have a serious problem relating to foresight, coherence of vision and policy, creating cumulative effects, and dysfunctional checks and balances in the governance system due to the political culture, organisational fragmentation, the persistence of multiple barriers to innovation in markets and the absence of a system approach. They often lack the right culture and governance tools to develop an ecosystem of innovation appropriate to the present challenges. As a result, attempts to implement innovation policy show few concrete effects on economic growth and significant research investments are wasted because they do not lead to new products and services in the market.

Therefore, a push is needed towards innovative paradigms and a focus on coaching and mentoring the available capacities to aid the emergence of an ecosystem of innovation in order to succeed in responding to present and future challenges.

The Concept of Innovation Ecosystems

An ecosystem is a complex of naturally interacting organisms, functioning with non-linear dynamics and feedbacks (HLG on Innovation Policy Management 2013). An innovation ecosystem aims to emulate nature in its organisational complexity and create the dynamics, interactions and feedbacks that produce desired outcomes, spin-offs and cumulative effects. Paradoxically, it requires parallel construction and deconstruction and creation of the right framework conditions, which can only be done through a holistic approach. Nevertheless, the effects may be uncertain at the start and appear to be marginal before developing their full potential.

Natural ecosystems evolve under the pressure of contextual change, or perish. Similarly, the creation of an ecosystem of innovation will be required and stimulated by external challenges that threaten the survival of achievements and of desired patterns. This can bring acceptance of the need for innovativeness if accompanied by clear identification and communication of the benefits upon success.

The key objective of developing an ecosystem of innovation is to create value for society, by enhancing the quality of life of its citizens and the competitiveness of its enterprises, through intelligent interaction between a variety of stakeholders, principally economic actors (large and small companies, often operating in symbiosis, and civic society organisations), public governance systems (at all levels), universities and other centres of education and knowledge.

Too often governments in mid-income countries push for development along traditional pathways, overlooking the complexity of a new internal and external economic and social context. Instead of 'courageous thinking outside the box', they continue to muddle through. Corporations that grew up during the first phase of economic modernisation all too often fail to design innovative strategies to position themselves better in global markets, and to learn to compete in the most advanced ones.

Value creation should start from a wide concept of demand and forecasting of known future needs. This can come from the needs

of industry to find solutions to specific problems in their value chain (such as resource efficiency) or from continuously emerging and changing societal needs (such as quality of living). Innovation will also often come through the involvement of stakeholders (co-creation). In certain cases, however, such as in public administrations, push and pull will be required in order to avoid a less efficient use of opportunities or outright opposition to change.

Demand-driven value creation requires permanent creativity, openness and agility, scanning of the global context, scouting for opportunities, and attention to continuities or discontinuities. The emergence of novel concepts or processes, products or services is often the result of out-of-the-box thinking, improvisation, repeated trial and error, and the emergence of new tacit and explicit knowledge until some form of consolidation takes place. Demand-driven value creation sometimes does not even imply a new product, but rather modernisation of existing consumption methods through digitalisation.

Clear and consistent leadership from the top is needed to create the framework conditions to facilitate other actors, primarily companies and centres of knowledge, to develop and manage the dynamic interactions that lead to measurable innovation and added value creation.

The steps in the following sections should be considered to start building an innovation ecosystem that will have a better chance to succeed in delivering results.

Assessment of Paradigm Shifts

To correctly assess deep changes is the first but difficult task in business and government because of a tendency to make comparisons with the past instead of focusing on the future through foresight. Professional foresight is a trans-disciplinary approach that seeks to improve the ability to anticipate, create and manage change in a variety of domains (scientific, technological, environmental, economic, cultural and societal), on a variety of scales (personal, organisational, societal, local, national and global) and through a variety of methods.

Its overarching objective is to permanently and comprehensively establish anticipatory thinking and a reflective handling of uncertainty in government institutions. This requires changes in the culture of an organisation and the processes of communication (Freuding et al. 2013). It is therefore essential to develop a realistic cognitive map, based on an assessment of the interacting developments. This must be done externally, through a network of centres of knowledge.

The resulting scan of innovation challenges for a mid-income country should be formulated to be solution neutral, enabling the emergence of creative ideas, which are the embryonic solutions, the potential impact of which can then be further analysed and used for strategy and scenario development. This will avoid future innovation efforts being determined by tactical considerations. Foresight helps governments to improve political decision-making by taking into account long-term and uncertain developments, deriving strategies for governments from the knowledge and insights acquired. It can be particularly useful to ensure policy coherence and strategy planning. Radical innovations spread to and cross-fertilise with other sectors of the economy; this changes the conditions of social life and inevitably of governance (Perez 1998).

The scientific and technological drivers of the present industrial revolution are multiple and have, just as before, known and unknown interdependent effects. They require deeply innovative governance methods for mentoring and monitoring these developments and for creating the framework conditions to ensure that resulting market developments are a force for the 'common good'. This in turn demands interdependent system changes and—very important to avoid new derailments—new value developments (Dror 2015).

Thinking the Unthinkable

The mid-income trap and economic stagnation cannot be overcome using an incremental approach, but rather only by utilising a radical approach in order to leapfrog and achieve mutation of traditional, early-stage development trajectories. This is not just the case when trying to

catch up in sectors of high innovation and rapid productivity growth, but also in traditional sectors where competitive advantage can be found (Malerba 2004). It is also obvious in public governance, where policies and accumulated rules, which are often outdated, are the main cause of a lack of competitiveness.

Countries must look at their own strengths and weaknesses and not simply try to imitate others (OECD 2007). For example, a high-tech cluster such as Silicon Valley flourishes because of particular contextual conditions that are very difficult or impossible to copy. Mid-income countries should look at their own historic, geopolitical, cultural, economic, research, education, labour market and other conditions and develop their own niche clusters with regional or global reach. Successful innovation clusters are urban or regional focused and internationally networked; therefore, city and regional governments also play an important role. This requires a certain degree of decentralisation, and in large countries a sufficient degree of regional autonomy must exist.

In any governance system there is a risk that the established underlying policy paradigms will dominate critical re-examination in view of fundamental contextual shifts. Therefore, a zero-based approach is needed to respond to the paradigm shifts and to challenge conventional wisdom about who should proceed and how in order to achieve results. The inter-relationship between national, regional and municipal governments, business and centres of knowledge is central to value creation. To achieve a higher degree of innovativeness, there should be more clear distinction between governance functions that are essentially routine and those where innovation is the priority.

Independent Impact Assessment

Following these steps, draft policies and regulations must be based on comprehensive evidence to be effective and be adhered to. A significant effort to ensure continuous independent impact assessments should be made, reviewing whether regulatory trajectories decided long ago have delivered desired outcomes and are therefore in need of change, taking into account feedback from industry and society, new scientific and

technological developments, and effects on competitiveness; it is equally important to deal with rapidly developing technology and new regulatory frameworks.

Independent impact assessment is a very useful instrument to prevent unintended collateral damage related to innovation, embed policies in economic and social realities, and radically improve policy coherence (HLG on Innovation Policy Management 2014). Impact assessments are most useful if carried out independently and continuously at every stage of the innovation process and in collaboration with stakeholders. They could be performed by a network of top research centres selected on the basis of excellence, and not necessarily only located in the relevant country. Such a network would boost research in all disciplines because the complexity of innovation systems requires a multi-disciplinary and multi-perspective approach.

An independent impact assessment institution or mechanism could therefore bring more effective and transparent policy-making, and could help uncover complex, interrelated effects of legislation on the economy and society. Impact assessments are particularly important in avoiding measures in one sector—or a lack of them—creating a domino effect in other sectors and negatively affecting macro-economic conditions.

Clear priorities for impact assessment need to be established upfront, such as policy and sector interfaces, and checking the impact on monetary and macro-economic policy; innovation and creation of a global competitive advantage; employment, research funding, potential outcomes and market access; welfare state mechanisms and their funding; regulatory stability; and long-term investments in many industry sectors. It should also evaluate the effects of rules and their application (or lack of) in other major economies, because this often creates competitive (dis)advantage, and of course the overall potential benefits measured against risks.

Strategic Capability Development

Innovation must primarily be demand driven, though in certain cases, such as public administrations, push and pull may be required in order

to avoid deficient use of opportunities or outright opposition to change. Demand can come from the need of industry to find solutions to specific problems in their value chain (such as resource efficiency, climate change adaptations), from continuously emerging and changing societal needs (such as quality of living, reduction of inequality) or from other elements in the ecosystem.

By focusing on a society's present and future needs, a culture of innovation will create value for business by facilitating new products, services and processes to enter the global market. In fact, value creation in a post-industrial and global economy should be seen as co-creation by key factors such as public authorities, business and academia, and occasionally other constructive stakeholders in the form of public–private partnerships or other collaborative mechanisms.

Sustainable value creation requires permanent strategic agility: openness to (global) context and emerging developments and attentiveness to continuities or discontinuities (Doz and Kosonen 2014). The emergence of novel concepts and products is often the result of improvisation, repeated trial and error, chance, or new tacit or explicit knowledge until some form of consolidation takes place. Innovation is a paradoxical process, combining the unknown, creativity and rigorous scientific method. It requires the opposite attitude from bureaucracy, which is about stable process and control in large entities; if this comes too early in innovation processes, it leads to inertia. Strategic agility requires specific leadership skills and organisational processes and these should not be limited to the business sector as they are also required in the governance sector at all levels.

Ensuring Policy and Strategy Coherence

Coherence is a key ingredient in creating cumulative effects in an innovation ecosystem. It demands an overall perspective to allow for radically new departures. Therefore, coherence cannot be provided with traditional coordination set-ups, which usually serve short-term interests.

Setting quantitative research spending objectives is insufficient when, in parallel, the policy focus is not placed on the long-term perspective

and qualitative targets. In order to tackle these limitations, and to innovate within the policy methodology itself to deliver coherent, mutually enforcing and effective innovation policies, three aspects must be taken into consideration: horizontal coherence (between public administrations), vertical coherence (between international, national and regional actors) and temporal coherence (long-term macro-economic stability).

In this context, the concept of innovation policy mix refers to the various policies relevant to innovation performance and the need for political coordination among multiple agents and governance levels involved in their formulation and implementation. Furthermore, neo-institutional theory has conceptualised the triple helix of university–business–government (Leyersdorf 2012). This model enables an analysis of the different dynamics at stake within and between these actors, which emerge at the national, regional and urban level.

Attention must also be given to de-synchronisation between governments who still act in accordance with national borders and businesses that follow European and global market opportunities. In order to ensure a focus on the mega-issues determined during the assessment phase—and avoid their premature absorption into policy-as-usual—and to create serendipity, an experimental attitude to reality and risk taking in the face of uncertainty, innovation must be coached centrally. It must be an overarching objective to which all others must converge.

Ensuring Stakeholder Engagement

Whatever the model, stakeholder engagement is crucial. To properly assess the paradigm shifts and align the various agendas, it is essential to involve the economic actors alongside the centres of knowledge because they often possess an understanding of market needs that is second to none. This demands development of a deliberation culture and tools that go beyond mechanistic stakeholder consultations in order to bring a shared vision and cooperation during implementation. For this reason, one should add society to the triple helix concept and speak of a quadruple helix (EU Commission 2015).

Research and centuries of experience show that there is a positive correlation between a society's degree of tolerance for the independent, creative and entrepreneurial minded and its economic success. To bring a scientific approach to all forms of risk requires consistent efforts of those in government, business and science to promote these values in the education systems and through the media, and enact reform of rules and accountability (Gretschmann 2016).

In order to align the contrasting—open and hidden—interests of a multitude of stakeholders, it is necessary to develop a learning mindset in all of them. Therefore, cross-disciplinary research and multi-experience inputs, as well as open-mindedness and incentives, and finally tolerant handling of failures, is necessary during the entire process of innovation ecosystem development.

In practice, more is needed: consistent and courageous leadership that is also sensitive to the requirements of a functioning innovation ecosystem and the continuously changing context. Leadership is often assumed yet seldom developed, but the complexity of ecosystem steering requires this. Needless to say, modern leadership and traditional hierarchical thinking do not go together.

Implementation

Clear leadership is also needed to overcome lack of commitment and subsequent fragmentation between traditionally defined policy domains. Once the conceptual phase and its various steps have passed, implementation becomes an issue that is often overlooked, leading to much frustration and ineffectiveness. The relations between different administrative units within government, as much as between them and the outside world, the different interfaces between politicians and civil servants, and, last but not least, capacity problems need to be urgently addressed in order to facilitate the emergence and functioning of an innovation ecosystem.

This requires attention to ensuring equal capabilities throughout governance systems of mid-income countries and a re-think of personnel

policy to ensure the required managerial qualities for a future leap forward. Education, vocational training and executive development in the public and private sector are a key element of success (HLG on Innovation Policy Management 2014).

Improving the role and use of ex-ante and ex-post evaluations can help a lot in improving internal learning, based on final impacts and not input indicators, and is an essential part of effective innovation policy-making. In order to be able to measure and compare the efficiency of policies, quantified targets relating to their implementation are needed.

Regulatory and Bureaucratic Burden Reduction

Innovation ecosystems require movement beyond a culture of regulation and control and towards a culture of mentoring and coaching of all stakeholders. Stewardship tools and coaching are more suited to promoting a culture of innovation and change among various actors than traditional command and control approaches (Kakabadse 2012).

The link between the competitiveness of countries and their regulatory environment is an increasingly important factor to look into when designing and implementing growth strategies. Not only do complex, obsolete, contradictory and sometimes unjustified regulations throw up artificial barriers to industry's research and development (R&D) efforts and end up hindering innovation processes, but they are also becoming a decisive factor for companies when determining the location of their investments in an interconnected economy where supply, production and innovation chains are global.

Rapid technological developments, open and expanding global markets, and ever-increasing access to information mean that regulations have to be under constant review and adapted to keep pace with the fast-moving world and facilitate innovation processes.

Effective regulatory reform has been defined as a "reform that increases private returns on investment by reducing net regulatory risks, costs or both" (World Bank/IFC 2009). The first point to consider is

the notion of 'net', as it underlines the need to change net costs (combination of all costs and risks), which would imply systemic, long-term, top-down and institutionalised strategies. If reform efforts only target selected costs and risk, they tend to be shorter-term, bottom-up and limited in scope. In other words, regulatory innovation must come hand-to-hand with a broader effort to innovate governance structures in order to set the right framework conditions for it to occur.

The second element to consider, deriving from the previous one, is the context for long-term change. Undertaking such deep and strategic reforms is a complex enterprise given the strong forces wanting to maintain status quo, in particular in bureaucracies. This is why certain 'framework' conditions must simultaneously be fulfilled to allow effective change.

Funding and Intellectual Property Protection

The protection of intellectual property (IPR) has a major impact on innovation and the growth of any economy (Greenhalgh and Rogers 2010). Companies in all sectors need to rely on a coherent system of IPR, which provides protection of their non-tangible assets at affordable prices, makes their registration, validation and renewal as simple as possible, and guarantees legal certainty and security. Overall, the protection of intellectual property needs to serve two purposes: protect intangible knowledge and skills from unauthorised exploitation in order to both adequately reward innovative ideas and discoveries and maintain and increase business' competitiveness and provide incentives for further investment in innovative R&D. Therefore, a solid and coherent patent system is necessary in order to guarantee firms the protection of their intellectual property at affordable prices, make the access to, and the process of, patent registration, validation and renewal as smooth, timesaving and economical as possible, and provide them with legal security and certainty through an effective litigation system and rigorous law enforcement against IPR infringement.

Cluster Development

Cluster policies should be based on market- and society-driven needs, but also on the identification of age-old indigenous skills, creativity, equipment, traditions and technologies upon which innovation clusters can rest. The evolution of clusters needs to be ensured from a bottom-up perspective rather than being artificially pushed from a top-down perspective. In particular, the fragmentation of cluster initiatives and funding modes, the limited internationalisation of clusters, and the unintended side effects of policies and regulations counter-productive to industrial cooperation and innovative activities need to be addressed (Arthurs 2009). In this context, the role and leverage of corporate locomotives and the symbiotic relations with SMEs need to be taken into consideration.

Evaluation

Regular peer review, scrutiny of processes and evaluation of achievements, or the lack thereof, by independent multi-stakeholder groups of experts are essential to ensure firmness of purpose and agility of methodologies. Experimenting with fundamentally new methods and abandoning or modifying programmes when they appear not to move fast enough towards tangible results must be a full part of an innovation ecosystem (HLG on Innovation Policy Management 2014).

Tolerance for failure must be included in evaluation approaches, provided the right efforts have been made of course, because without some form of controlled gambling there will not be sufficient innovation. This is a radical departure from the existing bureaucratic culture and requires strong leadership support, transparency and communication with stakeholders.

Evaluation is not only part of constant learning under circumstances of uncertainty, it will also help to develop a more constructive approach to risk management in the broadest sense. Learning capacities and risk acceptance are major characteristics of an innovation

ecosystem. They provide the basis for adjustments and often lead to additional innovativeness, and hence to better value creation and competitive advantage.

Benefits from Research and Innovation

Mid-income countries should be inspired by top performers, but should not try to copy them because they do not have the same systemic strengths. The country systems performing well in relation to innovation and competitiveness have some of the highest R&D expenditures and benefit from strong operational R&D networks, but a simple increase in R&D expenditure will not necessarily lead to growth and more quality jobs (Rasmussen 2016).

Creating the framework conditions in which entrepreneurs, citizens, governments and centres of knowledge regularly interact to deal with complexity through collaboration, competence, competition and communication to achieve concrete solutions, with a focus on people in the real world, is not only a task for public authorities. It also requires companies, and indeed others claiming to be stakeholders, such as universities or civic organisations, to improve the operational quality of their inputs in the policy and regulation debate; develop practical, day-to-day collaboration between all relevant actors in a multi-layered public governance; and seek management methods to work through the many complexities and contradictions in the present regulatory chain in order to build innovative frameworks that integrate multiple stakeholder demands, create alignment and still significantly reduce the burden on the economy (North 1990). This needs to be done without forgetting how to strengthen reputation and social capital (the license to operate) in the rapidly changing non-market context and with key political institutions, in order to ensure proportional regulatory approaches.

As noted previously, an innovation ecosystem model can be achieved through the systematic and radical deepening, widening and completion of traditional policies via the creation of innovative, collaborative governance models and methods. In order to guarantee the functioning of the system, a complete revision and continuous monitoring of the

methods, procedures and output of governance, as well as of the interaction between themselves and with other stakeholders, must be achieved. It requires creative and bold thinking, which is evidence-based and transparent, free from bureaucratic constraints and a one-sided focus on regulation, able to achieve innovative solutions and capable of addressing new challenges as well as developing alignment with stakeholders.

The Worldwide Governance Indicators project constructs aggregate indicators of broad dimensions of governance: accountability; political stability; government effectiveness; regulatory quality; rule of law; and control of corruption (World Bank 2011). The six aggregate indicators are based on 30 underlying data sources reporting the perceptions of governance from a large number of survey respondents and expert assessments worldwide. They show a strong correlation between the rule of law, a low level of corruption, accountable institutions, efficient decision-making and sustainable economic growth.

Just investing in research will not be enough if other framework conditions are not realised simultaneously, such as R&D coherence, development of a comprehensive strategy and reformation of the education system to provide the high-skill workers and top researchers that an advanced economy requires. The autonomy of universities to decide their own strategies is an important element, and so is vocational training through an efficient system of cooperation between business, technical schools and universities (Thoenig 2016).

Innovation and Economic Growth

Fundamentally, the output of an economy can grow by increasing the number of inputs entering the productive process, or by increasing how much output one gets from the same number of inputs.

The Organisation for Economic Co-operation and Development (OECD) has predicted that innovation will be "a crucial determinant of the global competitiveness of nations over the coming decade". Countries that utilise opportunities offered by globalisation and new technologies—through efficient private sector and effective governance methods—can increase their competitiveness and domestic progress. In

general, successful execution of innovation enables countries to make full use of resources, and by turning innovative ideas into new products and services, they create growth, quality jobs and can address their societal challenges.

Since the mid-1990s many countries have increased their efforts to integrate innovation-based economic growth by boosting jobs in key technological and manufacturing sectors. There is a race for global innovation advantage and for attracting high value-added economic activities. It is important to fully understand the relationship between innovation and the evolution of industries. During its evolution, an industry undergoes a process of transformation that involves knowledge, technologies, earnings, the features and competences of actors, the types of products and processes, and the institutions (Malerba 2005). Countries successfully modernise up to a point, and then find themselves in the mid-income trap because the key drivers, government, business and universities do not sufficiently and rapidly adapt to the requirements of playing in a different league. Institutional inertia and vested interests often prevent reforms and further systemic innovation.

Advancing innovation to the forefront of economic policy necessitates implementation of efficient innovation strategies and modes of funding, reducing regulatory complexity and rigidity, facilitation of industrial cooperation and public–private cooperation, and moving into next-generation industries, which are supportive of a nation's innovation ecosystem. Innovation has become the most important factor in a country's ability to thrive in the technology-driven global economy.

R&D Investments and Innovation Performance

Science is closely linked to innovation activities, by not only providing inspiration for business, but also by framing guidance for policy-making. Since the mid-1990s, investments in knowledge have increased more rapidly than investments in equipment and machinery across most OECD countries. The economic crisis has now led to a decline in business and public expenditure on R&D in many (European) countries. It is essential to (re-)create an entrepreneur-friendly environment

to support a significant number of start-ups and new clusters. These need to be nurtured to ensure that as many as possible can scale-up.

Innovation and Employment

Innovation in advanced economies has nearly always been followed by growth but also by shifts of employment, pointing to a positive long-run economic impact. Innovation and entrepreneurship satisfy the twin conditions for a public good: the benefits of entrepreneurial activities spill over in the entire economy; and it is impractical and cost ineffective to collect money from those benefiting from initial entrepreneurial activities. This provides a strong case for using public funds to support and finance the basis of entrepreneurship, i.e. research. After all, it is not just the entrepreneur but the entire society that gain from these activities.

The direct and indirect effects of small business formation accounts for more than half of gross domestic product (GDP) and around 60–80% of the new jobs created in developed countries. A study by the European Union (EU) Commission found that 85% of the net new jobs in Europe between 2002 and 2010 were created by SMEs. Moreover, these have secondary and tertiary employment effects in the economy.

The positive effect of entrepreneurship on economic performance has been referred to as the 'Schumpeter' effect. New firms create jobs, leading to a subsequent decrease in unemployment (Rasmussen 2016). Entrepreneurs have a vital role in the early evolution of industries by introducing new products or processes and, in the long-term, enhancing productivity through increasing competition. New entrants in the market also create knowledge regarding what is technically viable and what consumers prefer by introducing variations of existing products and services.

Conclusion

Innovation is much more than research: it requires an overarching and radical approach, which should be rooted in an ecosystem-oriented thinking, to achieve the main goal of innovation policy management—the best living and working conditions for all citizens (Gretschmann and Schepers 2016).

Despite certain variances, comparisons find that the best performing countries in innovation factors are also among the countries with the strongest competitive performance. Evidence also suggests that efforts that countries undertake (their combined inputs) are rewarded in terms of improved innovation outputs and value-creating activities. Although there is no single way to achieve top innovation performance, certain similarities exist among the most innovative countries: efficient governance toolsets, innovation strategies and funding modes for start-up and scale-up, strengths in national research, transparent public–private collaboration and partnerships, and commercialisation of technological knowledge. R&D expenditure and well-targeted business accelerators have a significant impact on research output and quality as well as on companies' growth, job hiring and new-to-market product innovations. However, a simple increase in R&D spending may not necessarily lead to growth and quality jobs creation if other framework conditions are not fulfilled.

The economic impacts provide a strong rationale for a system redesign that reorients policies and funding modes towards fostering the growth of innovative firms and giving innovation a new momentum. Finally, there will be no efficient innovation ecosystem without equal innovation in governance methodologies and tools.

References

Arthurs, D., et al. (2009). Indicators to support innovation cluster policy. *International Journal of Technology Management, 46*(3/4), 263–279.

Clark, C. (2012). *The sleepwalkers*. New York: HarperCollins.

Doz, Y., & Kosonen, M. (2014). *Building the strategic and agile state*. SITRA Studies.

Dror, Y. (2015). *Priming political leaders for fateful choices.* http://eruditio.worldacademy.org/issue-6/article/priming-policy-strata-fateful-choices.

EU Commission. (2015). *Open innovation strategy policy group report.*

Freuding, B., Fricke, J., Schmertzing, L., & Keisinger F. (2013). *Government foresight für Deutschland.* Sitftung Neue Verantwortung.

Greenhalgh, C., & Rogers, M. (2010). *Innovation, intellectual property, and economic growth*. Princeton: Princeton University Press.

Gretschmann, K. (2016). Icarus or Sisyphus: Innovation between hype, rebuff and new sobriety. In K. Gretschmann & S. Schepers (Eds.), *Revolutionising EU innovation policy*. London: Palgrave MacMillan.

Gretschmann, K., & Schepers, S. (2016). *Revolutionising EU innovation policy*. London: Palgrave MacMillan.

High Level Group on Innovation Policy Management. (2013). *Report on innovation ecosystem*. Brussels: High Level Group on Innovation Policy Management. www.highlevelgroup.eu.

High Level Group on Innovation Policy Management. (2014). *Blueprint: Inspiring and completing European innovation ecosystems.* Brussels: High Level Group on Innovation Policy Management. www.highlevelgroup.eu.

Jacobs, M., & Mazzucato, M. (2016). *Rethinking capitalism*. Chichester: Wiley Blackwell.

Kakabadse, A. (2012). Transforming government-nine critical steps. *The World Financial Review*, *March–April 2012*.

Leyersdorf, L. (2012). The triple helix of university-industry-government relations. In E. Carayannis & D. Campbell (Eds.), *Encyclopedia of creativity, innovation and entrepreneurship*. New York: Springer.

Malerba, F. (2004). *Sectoral systems of innovation*. Cambridge: Cambridge University Press.

Malerba, F. (2005). Innovation and the evolution of industries. *KITeS Working Papers*, 172. KITeS, Centre for Knowledge, Internationalization and Technology Studies. Milano: Universita' Bocconi.

Mazzucato, M. (2013). *The entrepreneurial state*. London: Anthem.

Mostovicz, E., Korac-Kakabadse, N., & Kakabadse, A. (2012). Corporate governance: quo vadis? In corporate governance. *Journal of Business in Society, 11*(5), 613–626.

Nägele, R. (2015). *Living and working in an interconnected world.* Frauenhofer Netzwerk Allianz. www.fraunhofer.de.

North, D. C. (1990). *Institutions, institutional change and economic performance*. New York: Cambridge University Press.

OECD. (2007). *Innovation and growth—Rationale for an innovation strategy.*

Perez, C. (1998). Neue Techologien und sozio-institutioneller Wandel. In H. Thomas & L. Nefiodow (Eds.), *Kondratieffs Zyklen der Wirtschaft.* Herford.

Rasmussen, M. (2016). The benefits and rewards of innovation policies. In K. Gretschmann & S. Schepers (Eds.), *Revolutionising EU innovation policy*. London: Palgrave MacMillan.

Sitglitz, J. (2012). *The price of inequality*. Allan Lane.

Thoenig, J. C. (2016). Developing top academic institutions to support innovation.
World Bank. (2011). *Worldwide governance indicators*.
World Bank/IFC. (2009). *Lessons for reformers: How to launch, implement, and sustain regulatory reform*. Washington, DC: The World Bank Group.

Is Innovation Conducive to Economic Growth? The Case of Central and Eastern European Countries

Sefer Sener and Cigdem Borke Tunali

Introduction

In economics literature, the effects of technological progress and innovation on economic growth and development have been investigated since the 1980s both theoretically and empirically. In particular, along with the development of Endogenous Economic Growth Models which were put forward by Romer (1986, 1990) and Lucas (1988), the number of empirical studies that focus on this issue has increased dramatically.

Although the number of empirical analyses that examine the effect of technological progress and innovation on the level of economic growth and development is quite high, there are very few studies examining this issue in Central and Eastern European countries. Furthermore, most of the existing studies do not take into account the quality aspect of

S. Sener (✉) · C.B. Tunali
Faculty of Economics, Istanbul University, Istanbul, Turkey
e-mail: sefersener@istanbul.edu.tr

C.B. Tunali
e-mail: cbtunali@istanbul.edu.tr

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_3

innovation. Unlike most of the previous studies, this chapter makes two contributions to the existing literature: first, the effect of innovation is investigated in the Central and Eastern European countries; and second, both the quantity and quality aspects of innovation are taken into consideration in the empirical analysis.

The results of the empirical estimations indicate that research and development (R&D) expenditures do not have any effects on economic growth both in the short- and long-run. Moreover, while patent applications to the European Patent Office (EPO) and patents granted by the United States Patent and Trademark Office (USPTO) have a negative effect on economic growth in the short-run, this effect becomes positive in the long-run. The negative effect of patents in the short-run may result from the fact that obtaining a patent requires a long invention process carried out by spending a huge amount of money on R&D activities. However, once a patent is obtained and new goods and services are introduced to the market, the profits of the firm that owns the patent increase and this also leads to an increase in the economic growth rate. Hence, we suggest that innovation activities, especially patents, positively influence the economic growth rates of Central and Eastern European countries in the long-run.

In this chapter we first briefly summarise the theoretical literature and the recent empirical analyses that investigate the effect of innovation on economic growth (section "Literature Review"), followed by an explanation of the dataset and methodology used in the empirical analysis in section "Data and Methodology". Section "Results" discusses the results of the empirical analysis in detail and, finally, section "Conclusion" draws conclusions.

Literature Review

The determinants of economic growth have been one of the mostly debated issues in the economics literature since the beginning of the 1900s. In the theoretical field, different economic growth models have been put forward in order to explain the process of economic growth. According to the Neoclassical Economic Growth Models developed

by Ramsey (1928), Solow (1956) and Swan (1956), economic growth is determined by the developments in capital and labour. However, although technological progress plays a significant role in maintaining long-run economic growth by eliminating diminishing returns to capital in these models, technological progress is taken as an exogenous determinant of economic growth together with the population growth rate (Guloglu and Tekin 2012).

In contrast to the Neoclassical Economic Growth Models, the Endogenous Economic Growth Models developed by Romer (1986, 1990), Lucas (1988), Grossman and Helpman (1990, 1991), and Aghion and Howitt (1992) argue that technological progress is an endogenous determinant of long-run economic growth. According to these models, technological progress, or more precisely innovation, is generated in R&D industries by drawing on human capital and knowledge stock and it is then used to produce goods and services, causing a lasting rise in economic growth (Ulku 2004).

Together with the development of Endogenous Economic Growth Models, the number of empirical studies that examine the effect of innovation activities on economic growth has increased dramatically. Here, we present the results of recent empirical studies that focus on the economic growth–innovation nexus.[1]

Crosby (2000) has analysed the influence of innovation on economic growth in Australia between 1901 and 1997. In this empirical analysis, Crosby (2000) used patent data as the key independent variable that represents innovation and found that rising patent activities increase labour productivity and economic growth.

Ulku (2004) investigated whether innovation lead to sustainable economic growth in 20 OECD (Organization for Economic Co-operation and Development) and 10 non-OECD countries during the period 1981–1997 by employing patent and R&D expenditure data. In the empirical analysis, the author used a number of panel data techniques and found that whilst innovation positively affects economic growth both in the OECD and non-OECD countries, R&D stock influences innovation only in the OECD countries with large markets (Ulku 2004).

Bilbao-Osorio and Rodriguez-Pose (2004) examined the relationship between R&D investments and innovation and between innovation

and economic growth in the peripheral and non-peripheral regions of the European Union (EU). Using a dataset covering the 1990s, they found that while privately funded R&D activities are the main determinants of innovation in the non-peripheral regions of the EU, it is the private research together with the research in the higher education institutions that lead to innovation in the peripheral regions of the EU (Bilbao-Osorio and Rodriguez-Pose 2004). With regard to the effect of innovation on economic growth, Bilbao-Osorio and Rodriguez-Pose (2004) argue that although innovation has a positive effect on economic growth in the peripheral European regions, there is no relationship between innovation and economic growth in the non-peripheral European regions.

Goel et al. (2008) investigated the relationship between federal, non-federal, defence R&D expenditures and economic growth in the USA for the period 1953–2000. The Bounds Testing approach and Autoregressive Distributed Lag (ARDL) methodology developed by Pesaran et al. (2001) were employed in the empirical estimations (Goel et al. 2008). The empirical results of this study indicate that federal R&D expenditures in comparison with non-federal R&D expenditures and defence R&D expenditures relative to non-defence R&D expenditures have a stronger effect on the economic growth rates in the USA over the period under investigation (Goel et al. 2008).

Similar to the study by Bilbao-Osorio and Rodriguez-Pose (2004), Capello and Lenzi (2014) analysed the impact of knowledge and innovation on the economic growth performance of 262 regions in 27 EU countries. In the empirical analysis, the authors used R&D expenditures and the share of firms introducing product and/or process innovations as the indicators of knowledge and innovation activities, respectively, and found that the positive effects of innovation on economic growth are more diffusive than knowledge in the regions under investigation (Capello and Lenzi 2014).

Falk (2007) assessed the impact of R&D investment on economic growth for OECD countries over the period 1970–2004. In the empirical analysis, Falk (2007) uses 5-year averages of the variables and estimates the models by using the system Generalized Method of Moments (GMM) estimator in order to remove the endogeneity problem.

According to the results of the estimations, Falk (2007) concludes that R&D investments in high-tech sectors have a positive effect on economic growth rates in the OECD countries.

Wang (2007) examined the efficiency of R&D activities in 23 OECD and 7 non-OECD countries by constructing a cross-country production model. In the empirical analysis, stochastic frontier methods were employed and the models were estimated using a dataset covering the period between 1998 and 2002 (Wang 2007). According to the estimation results, Wang (2007) asserts that there is a positive correlation between R&D activities and income level in the 30 countries under investigation.

Pessoa (2010) investigated the relationship between R&D expenditures and economic growth in the OECD countries by proposing a method to obtain the growth rate of technology. The results of the estimations indicate that the relationship between R&D expenditures and economic growth changes according to the specific characteristics of the countries (Pessoa 2010).

Hasan and Tucci (2010) investigated the effect of both the quality and quantity of innovation on economic growth in 58 countries over the period 1980–2003. The authors used two different quality indicators of innovation and found that higher-quality patents led to higher economic growth (Hasan and Tucci 2010). Moreover, the results of this empirical analysis show that an increase in the number of patents results in an increase in the level of economic growth for the countries under investigation (Hasan and Tucci 2010).

The casual relationship among R&D expenditures, innovation and economic growth in 13 high-income OECD countries was analysed by Guloglu and Tekin (2012) for the period 1991–2007. The authors estimated panel Granger Causality tests by employing panel fixed effects and GMM methods (Guloglu and Tekin 2012). According to the results of empirical estimations, Guloglu and Tekin (2012) suggest that R&D expenditures lead to technological change and technological change results in economic growth in high-income OECD countries.

Petrariu et al. (2013) assessed the influence of innovation on economic growth in the Central and Eastern European countries between 1996 and 2010. The authors used a number of different indicators of

innovation such as R&D spending, patents and the number of researchers (Petrariu et al. 2013). The empirical results of this analysis show that R&D spending and the number of patents have a statistically significant but negative effect on economic growth in the Central and Eastern European countries (Petrariu et al. 2013). Hence, Petrariu et al. (2013) suggest that this result indicates the existence of a catch-up process.

Galindo and Mendez (2014) analysed the interaction between entrepreneurship, innovation and economic growth in 13 developed countries using panel data for the period 2002–2011. According to the empirical results, they conclude that innovation and entrepreneurship have a positive effect on economic growth and that increasing rates of economic growth causes increasing innovation and entrepreneurship activities (Galindo and Mendez 2014).

Pece et al. (2015) examined the relationship between innovation and economic growth in Poland, the Czech Republic and Hungary over the period 2000–2013. In the empirical analysis, the authors employed the number of patents, the number of trademarks and R&D expenditures per capita as the indicators of innovation and concluded that innovation activities positively influence economic growth rates in these countries (Pece et al. 2015).

In summary, as can be seen from the literature reviewed here, there are many studies that mainly focus on the relationship between R&D activities and economic growth in the existing literature. However, the majority of these studies only take into account the quantity aspect of R&D activities and innovation and do not deal with the quality aspect of these factors. In this study, we investigate the effect of innovation on economic growth by considering both the quantity and quality dimensions of innovation and hence contribute to the literature by providing new evidence with regard to the relationship between innovation and economic growth.

Data and Methodology

In this empirical analysis, we use an unbalanced panel dataset covering the period between 1993 and 2014 in order to investigate the effect of innovation on economic growth in the Central and Eastern European

countries that are also the members of the EU. We used the OECD's definition of the Central and Eastern European countries (OECD 2016) to select the countries for inclusion in the empirical analysis. According to this definition, Central and Eastern European countries are Albania, Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Slovenia, Estonia, Latvia and Lithuania. Since Albania is not a member of the EU and the R&D expenditure data for Croatia starts in 2002 we excluded these countries from our dataset. The variables used in the empirical analysis are the real gross domestic product (GDP) growth rate, gross fixed capital formation as a percentage of GDP, population growth rate, total R&D expenditures as a percentage of GDP, patent applications to the EPO as a percentage of total R&D expenditures, and patents granted by the USPTO as a percentage of total R&D expenditures. While real GDP growth rate, gross fixed capital formation and population data are taken from the annual macroeconomic database of the European Commission (AMECO) (European Commission Economic and Financial Affairs–AMECO 2016) data on total R&D expenditures, patent applications to the EPO and patents granted by the USPTO are obtained from the Eurostat (European Commission–Eurostat 2016).

As stated earlier, we take into account both the quantity and quality aspects of innovation and examine whether these different aspects have a diverse impact on the GDP growth rate. Similar to the study by Hasan and Tucci (2010), total R&D expenditures and patent applications to the EPO represent the quantity aspect of innovation whilst patents granted by the USPTO represent the significance and the quality of innovation.

We have estimated a standard Solow Model, which asserts that economic growth is determined by capital and population growth. In order to ascertain the influence of innovation on economic growth we added variables representing the quantity and quality aspects of innovation to the model. The estimated empirical model is stated as follows (Eq. 1):

$$\Delta y_{it} = \alpha_{1t} cap_{it} + \alpha_{2t}(g_{it} + n_{it} + \varphi_{it}) + \alpha_{3t} randd_{it} + \alpha_{4t} crisis + \sigma_i + \varepsilon_{it} \quad (1)$$

In this equation, y is real GDP (Δy is the real GDP growth rate), *cap* is gross fixed capital formation as a percentage of GDP, η is population

growth, g and φ are technological progress and technological depreciation, respectively (since we do not have a reliable measure of these two terms in the countries under investigation, we substitute the sum of them with a constant term which is equal to 0.06), *rand* represents innovation (total R&D expenditures as a percentage of GDP, patent applications to the EPO as a percentage of total R&D expenditures, patents granted by the USPTO as a percentage of total R&D expenditures), *crisis* is a dummy variable that takes the value of 1 after 2007 and represents the 2008 Global Economic Crisis, σ represents country dummies, ε is the error term, and i and t are the country and time subscripts, respectively. We take the logarithms of all of the variables and estimate this model for each innovation indicator separately.

In order to estimate this model we employ Mean Group (MG) and Pooled Mean Group (PMG) estimators, new techniques developed by Pesaran and Smith (1995) and Pesaran et al. (1997, 1999). These estimators are used to estimate non-stationary dynamic panels in which the parameters are heterogeneous across groups (Blackburne and Frank 2007).

The dynamic heterogeneous panel regression can be stated as an error–correction model by drawing on ARDL (p,q)[2] model (Pesaran et al. 1999; Blackburne and Frank 2007) (Eq. 2):

$$\Delta y_{it} = \vartheta_i\left(y_{i,t-1} - \sigma_i^{'} X_{it}\right) + \sum_{j=1}^{p-1} \tau_{ij}^{*} \Delta y_{i,t-1} + \sum_{j=0}^{q-1} \gamma_{ij}^{'*} \Delta X_{i,t-j} + \mu_i + \varepsilon_{it} \quad (2)$$

In this equation, y is the real GDP growth rate, X represents the independent variables, τ and γ are the short-run coefficients of the dependent and independent variables, respectively, σ is the long-run coefficient, ϑ is the speed of adjustment term (error correction coefficient), and i and t are country and time subscripts, respectively. Here, the speed of adjustment term (error correction coefficient) is particularly important as this variable should be statistically significant and negative in order to have a long-run relationship between the variables (Blackburne and Frank 2007). This equation can be estimated by employing MG and PMG estimators (Pesaran and Smith 1995; Pesaran et al. 1997, 1999). While the intercepts, slope coefficients and error variances are allowed

to change across groups with the MG estimator developed by Pesaran and Smith (1995), the PMG estimator developed by Pesaran et al. (1997, 1999) allows the intercept, short-run coefficients and error variances to change but restricts long-run coefficients to be equal across groups (Blackburne and Frank 2007).

We estimate our model by drawing on both MG and PMG estimators and then use the Hausman test (Hausman 1978) to decide which estimator is more efficient and thus should be preferred.

Results

In order to estimate our model using MG and PMG estimators we need to decide the lag length of the variables before the estimations.[3] In the literature it is suggested that when the time period is short, ARDL (1, 1), a common lag structure, can be used in the model (Loayza and Ranciere 2006; Demetriades and Law 2006). Since our dataset covers only 22 years, we applied ARDL (1, 1) while estimating our regressions.

Table 1 shows the results of regressions in which R&D expenditures as a percentage of GDP is used as the innovation variable. In order to evaluate the coefficient estimations, we should first decide which estimator is more efficient and thus gives more reliable results than the other estimator. According to the result of the Hausman Test, the PMG estimator is more efficient than the MG estimator. Hence, we take into account the results of regressions obtained using the PMG estimator. These results are shown in column 2 of Table 1.

According to the coefficient estimations, gross fixed capital formation has a statistically significant and positive effect on economic growth both in the short- and long-run. Moreover, the crisis variable which represents the 2008 Global Economic Crisis has a significant and negative impact on economic growth in the long-run. However, neither the sum of population growth, technological progress and technological depreciation nor R&D expenditures has a statistically significant influence on economic growth. Hence, these results suggest that R&D expenditures do not affect economic growth rates in the Central and Eastern European countries over the period under investigation.

Table 1 Estimation results (innovation variable: research and development expenditures)

Long-run coefficients	Pooled mean group	Mean group
Gross fixed capital formation	0.036967***	0.002941
	(0.0114)	(0.0347)
Pop. growth + tech. progress + tech. depreciation	0.005742	−0.03452
	(0.0284)	(0.0798)
Research and development expenditure	−0.01254	0.005844
	(0.0095)	(0.0117)
Crisis	−0.01706***	−0.03699***
	(0.0050)	(0.0098)
Error correction coefficient	−0.94685***	−1.02136***
	(0.0474)	(0.0721)
ΔGross fixed capital formation	0.20085***	0.190939***
	(0.0472)	(0.0483)
ΔPopulation growth	0.079282	0.098125
	(0.0497)	(0.0787)
ΔResearch and development expenditure	0.005263	−0.01459
	(0.0186)	(0.0244)
Intercept	0.047859***	−0.035
	(0.0050)	(0.2608)
Hausman Test	7.1	
P value	0.1306	
Observation	203	203

Standard errors are in parentheses. The chosen lag structure is Autoregressive Distributed Lag (1, 1, 1, 1). The models are estimated using the xtpmg routine (Blackburne and Frank 2007) in STATA®. The Hausman Test indicates that the Pooled Mean Group estimator is more consistent and efficient than the Mean Group estimator

***$p \leq 0.01$

Source Authors' estimations

Table 2 represents the results of regressions in which patent applications to the EPO as a percentage of total R&D expenditures are used as the innovation variable. According to the Hausman Test result, the PMG estimator is more efficient than the MG estimator. Thus, we take into consideration the results of regression, which is estimated using the PMG estimator while assessing the effect of patent applications to the EPO on economic growth. These results are shown in column 2 of Table 2.

Table 2 Estimation Results (Innovation Variable: Patents—Europe)

Long-run coefficients	Pooled mean group	Mean group
Gross fixed cap. for.	0.02957***	0.014935
	(0.0103)	(0.0233)
Population growth	0.009102	–0.00475
	(0.0274)	(0.0955)
Patents—Europe	0.011885***	0.014286
	(0.0035)	(0.0104)
Crisis	−0.02666***	–0.03562***
	(0.0036)	(0.0053)
Error correction coef.	−0.9607***	–1.06584***
	(0.0428)	(0.0711)
∆Gross fixed cap. for.	0.207856***	0.222799***
	(0.0440)	(0.0581)
∆Population growth	0.077908	0.096364
	(0.0496)	(0.0962)
∆Patents—Europe	−0.01162***	–0.00402
	(0.0031)	(0.0057)
Intercept	0.056129***	–0.0134
	(0.0052)	(0.2970)
Hausman Test	5.86	
P value	0.2098	
Observation	197	197

Standard errors are in parenthesis. The chosen lag structure is ARDL (1, 1, 1, 1). The models are estimated by using xtpmg routine (Blackburne and Frank 2007) in STATA®. Hausman Test indicates that PMG estimator is more consistent and efficient than MG estimator.

***$p \leq 0.01$

Source Authors' estimations

Similar to the previous results, gross fixed capital formation has a statistically significant and positive impact on economic growth both in the short- and long-run. Furthermore, while crisis negatively affects economic growth in the long-run, the sum of population growth, technological progress and technological depreciation does not influence economic growth in either the short- or long-run. However, unlike previous results, patent applications to the EPO has a statistically significant effect on economic growth. Whilst this variable has a negative impact on economic growth in the short-run, this impact turns out to be positive in the long-run. This may stem from the fact that in order

to obtain a patent, considerable R&D investments are made and these investments do not come to fruition in the short-run. However, in the long-run the patents increase the profitability of firms and positively influence economic growth. Thus, according to these results, we argue that instead of innovation inputs (R&D expenditures), innovation outputs (patents) have a positive effect on economic growth in the Central and Eastern European countries.

Table 3 shows our final estimations, in which our innovation variable is the patents granted by the USPTO as a percentage of total R&D expenditures. Consistent with the previous results, the Hausman Test indicates that the PMG estimator is more efficient than the MG estimator. According to the results of regression, which is estimated using the PMG estimator, gross fixed capital formation has a positive influence on economic growth both in the short- and long-run. In addition to this, the sum of population growth, technological progress and technological depreciation is statistically significant in neither the short-run nor the long-run and crisis has a statistically significant negative impact on economic growth in the long-run. These results are in keeping with our previous results. With regard to the effect of patents granted by the USPTO, we conclude that this variable positively affects economic growth in the long-run. So, according to this result, we assert that the quality of innovation has a positive impact on economic growth in the long-run.

To summarise, our results show that gross fixed capital formation positively influences economic growth both in the short- and long-run. Furthermore, crisis has a negative impact on economic growth in the long-run. However, the sum of population growth, technological progress and technological depreciation does not have any effects on economic growth both in the short- and long-run. With regard to innovation, our results suggest that innovation inputs (R&D expenditures) have no effects on economic growth both in the short- and long-run. However, innovation outputs (patent applications to the EPO and patents granted by the USPTO) have a negative effect on economic growth in the short-run and a positive effect on economic growth in the long-run. These results indicate that although total R&D expenditures do not influence economic growth, the subset of R&D expenditures that

Table 3 Estimation results (innovation variable: patents—USA)

Long-run coefficients	Pooled mean group	Mean group
Gross fixed capital formation	0.026844**	0.002226
	(0.0112)	(0.0287)
Population growth	0.037379	−0.11599
	(0.0297)	(0.1642)
Patents—USA	0.009117**	0.011674
	(0.0041)	(0.0145)
Crisis	−0.01328***	−0.02719**
	(0.0038)	(0.0107)
Error correction coefficient	−0.95097***	−1.09134***
	(0.0600)	(0.0852)
ΔGross fixed capital formation	0.227675***	0.256426***
	(0.0521)	(0.0528)
ΔPopulation growth	0.041008	0.152529
	(0.0881)	(0.1051)
ΔPatents—USA	−0.00344	−0.00352
	(0.0039)	(0.0075)
Intercept	0.143151***	−0.431
	(0.0120)	(0.5496)
Hausman Test	1.27	
P Value	0.8663	
Observation	168	168

Standard errors are in parentheses. The chosen lag structure is Autoregressive Distributed Lag (1, 1, 1, 1). The models are estimated by using xtpmg routine (Blackburne and Frank 2007) in STATA®. The Hausman Test indicates that the Pooled Mean Group estimator is more consistent and efficient than the Mean Group estimator

$^{**}p \leq 0.05$, $^{***}p \leq 0.01$

Source Authors' estimations

transforms into patents has a positive influence on economic growth in the long-run. The reason that patents negatively affect economic growth in the short-run is because it takes time for a patent to become profitable. Hence, while patents have a negative effect on economic growth in the short-run because of the huge R&D expenditures, this effect turns out to be positive in the long-run.

Conclusion

Since the 1980s, together with the theoretical developments, technological progress and innovation have been accepted in the economic growth literature as the main drivers of economic growth. In parallel with these developments in the theoretical sphere, empirical analyses that investigate the effect of innovation on economic growth have significantly increased. Although there are many studies analysing the influence of innovation on economic growth in the existing literature, most of these studies do not take into account the quality aspect of innovation and its impact on economic growth. Moreover, the number of studies that examine this issue in the Central and Eastern European countries is low in comparison with the number of studies that focus on Western/high-income countries. This study contributes to the existing literature by investigating the effect of innovation on economic growth in the Central and Eastern European countries. Unlike most of the previous studies, both the quantity and the quality aspects of innovation are taken into account in the empirical analysis.

The results of the empirical analysis indicate that whilst innovation inputs, which are R&D expenditures, do not have any effects on economic growth, innovation outputs, which are patent applications to the EPO and patents granted by the USPTO, have a positive influence on economic growth in the long-run. Although empirical results show that patents negatively affect economic growth in the short-run, this result may stem from the fact that in order for a patent to become profitable a certain period of time is needed, and high R&D expenditures, which are required for new inventions and patents, have a negative effect on economic growth in the short-run.

According to all of these empirical results, we suggest that R&D expenditures that transform into patents should be supported by policy-makers as these expenditures have an increasing effect on economic growth in the Central and Eastern European countries. Hence, innovation incentives that are granted according to firms' patent performance can be beneficial to the level of economic growth and development in the Central and Eastern European countries.

Notes

1. For a review of earlier empirical analyses, see Cameron (1998). For a review of related literature, see Wang (2010).
2. p and q are the lag of the dependent and independent variables, respectively.
3. It is also important to decide the order of integration of the variables since Mean Group and Pooled Mean Group estimators (Pesaran and Smith 1995; Pesaran et al. 1997, 1999) can be applied as long as the variables are either stationary or integrated in the first order. However, our dataset covers a short period of time (only 22 years) and since it is very unlikely to find series that are integrated in the second or higher order when the time period is short we do not apply a panel unit root test in this analysis.

References

Aghion, P., & Howitt, P. (1992). A model of growth through creative destruction. *Econometrica, 60*(2), 323–351.

Bilbao-Osorio, B., & Rodriguez-Pose, A. (2004). From R&D to innovation and economic growth in the EU. *Growth and Change, 35*(4), 434–455.

Blackburne, E. F., & Frank, M. W. (2007). Estimation of nonstationary heterogeneous panels. *The Stata Journal, 7*(2), 197–208.

Cameron, G. (1998). *Innovation and growth: A survey of the empirical evidence*. http://www.nuff.ox.ac.uk/users/cameron/papers/empiric.pdf.

Capello, R., & Lenzi, C. (2014). Spatial heterogeneity in knowledge, innovation, and economic growth nexus: Conceptual reflections and empirical evidence. *Journal of Regional Science, 54*(2), 186–214.

Crosby, M. (2000). Patents, innovation and growth. *The Economic Record, 76*(234), 255–262.

Demetriades, P., & Law, S. H. (2006). Finance, institutions and economic development. *International Journal of Finance & Economics, 11*(3), 245–260.

European Commission Economic and Financial Affairs–AMECO. (2016). Annual macro-economic database. http://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm.

European Commission–Eurostat. (2016). European statistics database. http://ec.europa.eu/eurostat/data/database.

Falk, M. (2007). R&D spending in the high-tech sector and economic growth. *Research in Economics, 61*(3), 140–147.

Galindo, M. A., & Mendez, M. T. (2014). Entrepreneurship, economic growth, and innovation: Are feedback effects at work? *Journal of Business Research, 67*(5), 825–829.

Goel, R. K., Payne, J. E., & Ram, R. (2008). R&D expenditures and US economic growth: A disaggregated approach. *Journal of Policy Modelling, 30*(2), 237–250.

Grossman, G. M., & Helpman, E. (1990). Trade, innovation, and growth. *The American Economic Review, 80*(2), 86–91.

Grossman, G. M., & Helpman, E. (1991). *Innovation and growth in the global economy*. Cambridge: MIT Press.

Guloglu, B., & Tekin, R. B. (2012). A panel causality analysis of the relationship among research and development, innovation, and economic growth in high-income OECD countries. *Euroasian Economic Review, 2*(1), 32–47.

Hasan, I., & Tucci, C. L. (2010). The innovation-economic growth nexus: Global evidence. *Research Policy, 39*(10), 1264–1276.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica, 46*(6), 1251–1271.

Loayza, N. V., & Ranciere, R. (2006). Financial development, financial fragility, and growth. *Journal of Money, Credit and Banking, 38*(4), 1051–1076.

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics, 22*(1), 3–42.

OECD. (2016). Glossary of statistical terms. https://stats.oecd.org/glossary/detail.asp?ID=303.

Pece, A. M., Ecaterina, O., Simona, O., & Salisteanu, F. (2015). Innovation and economic growth: An empirical analysis for CEE countries. 4th World Conference on Business, Economics and Management (WCBEM). *Procedia Economics and Finance, 26*, 461–467.

Pessoa, A. (2010). R&D and economic growth: How strong is the link? *Economics Letters, 107*(2), 152–154.

Pesaran, M. H., & Smith, R. P. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics, 68*(1), 79–113.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1997). *Pooled estimation of long-run relationships in dynamic heterogeneous panels*. http://www.econ.cam.ac.uk/people/emeritus/mhp1/jasaold.pdf.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association, 94*(446), 621–634.

Pesaran, M. H., Shin, Y., & Smith, R. P. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326.

Petrariu, I. R., Bumbac, R., & Ciobanu, R. (2013). Innovation: A path to competitiveness and economic growth the case of CEE countries. *Theoretical and Applied Economics, 20*(5/582), 15–26.

Ramsey, F. P. (1928). A mathematical theory of saving. *The Economic Journal, 38*(152), 543–559.

Romer, P. M. (1986). Increasing returns and long run growth. *The Journal of Political Economy, 94*(5), 1002–1037.

Romer, P. M. (1990). Endogenous technical change. *The Journal of Political Economy, 98*(5), Part 2: The Problem of Development: A Conference of the Institute for the Study of Free Enterprise Systems, S71–S102.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics, 70*(1), 65–94.

Swan, T. W. (1956). Economic growth and capital accumulation. *Economic Record, 32*(2), 334–361.

Ulku, H. (2004). R&D, innovation, and economic growth: An empirical analysis. *IMF Working Paper* no.: WP/04/185. https://www.imf.org/external/pubs/ft/wp/2004/wp04185.pdf.

Wang, E. C. (2007). R&D efficiency and economic performance: A cross-country analysis using the stochastic frontier approach. *Journal of Policy Modelling, 29*(2), 345–360.

Wang, E. C. (2010). Determinants of R&D investment: The extreme-bounds-analysis approach applied to 26 OECD countries. *Research Policy, 39*(1), 103–116.

The Dynamic Function of Innovative Entrepreneurship in Evolutionary Economics for Middle-Income Countries

Sefer Sener and Volkan Hacioglu

Introduction

In the contemporary world, the term 'innovation' is generally used as a central concept to define socioeconomic change, progress, development and adaptation. The dynamic nature of economic phenomena requires new paradigms as complex economic systems evolve through time. There is a close connection between innovation and evolution where they exert action on and react to one another incessantly. In this sense, they may well be defined as having a mutual recursive function in terms of each other. Every evolution involves innovation, and vice versa. In order to understand the true dynamics of economic growth, one must analyse the endogenous dynamics of innovation, which have hitherto been ignored by neoclassical economics.

S. Sener (✉) · V. Hacioglu
Faculty of Economics, Istanbul University, Istanbul, Turkey
e-mail: sefersener@istanbul.edu.tr

V. Hacioglu
e-mail: volkanh@istanbul.edu.tr

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_4

The static equilibrium mechanism of neoclassical economics is established on the self-enforcing pure price system of perfect competition. In this system, no special dynamic function for innovative entrepreneurship is appropriated. The role of the entrepreneur in the economy is neither innovative nor dynamic, but rather static and exogenous. The typical entrepreneur in the neoclassical conception is a businessman who exerts his best endeavour to attain market efficiency through the optimum allocation of goods and services in a society in which the economy operates at comparatively static and infinitesimal time intervals but not in an evolutionary environment.

The term 'evolutionary economics' was coined by Thorstein Veblen (1898) in order to describe the dynamic and complex nature of modern economic life. In *The Theory of Economic Development*, Schumpeter (1912) analysed the dynamic function of innovative entrepreneur in a non-deterministic way as opposed to with neoclassical economics. In the original name of Schumpeter's book, the German word 'Entwicklung' has the connotation of 'evolution' instead of the translated word 'development'. His analysis involves the evolutionary, and thereby dynamic, function of innovative entrepreneurship in a modern economic world.

Schumpeter considered the static equilibrium mechanism of neoclassical theory impeccable, especially as culminated in the work of Leon Walras. But he also asserted that the element of time had not yet been introduced in an appropriate manner into the theory. The dynamic nature of innovative entrepreneurship that is exogenous to the neoclassical theory can only be endogenised by the inclusion of the element of time into the model. The modification of the static mechanism of equilibrium to a dynamic mechanism of change specifies the 'dysfunction' of innovative entrepreneurship in neoclassical economics and still stands as a problem that needs to be tackled in the economic literature.

In this study, we deal with the economic dimension of innovative entrepreneurship in a general theoretical setting/framework, which is as relevant to the developed higher-income countries as it is to the developing middle-income countries. The theory has similar qualifications for all income groups, but results vary in different countries for various income groups. For example, in developed countries, innovative

entrepreneurship leads to high value-added production, while it entails low value-added production in developing countries. For this reason, the function of innovative entrepreneurship should be taken more specifically in those developing countries that are on the verge of the middle-income trap.

A Brief Historical Sketch of the Role of the Innovative Entrepreneur in Classical Economic Theory

The word 'entrepreneur'—French in origin—was articulated for the first time by Richard Cantillon in his work *Essai sur la Nature du Commerce en Général* (1755). In classical economic theory, the entrepreneur enters into the economic system as one of the factors of production along with land, labour and capital. The entrepreneur as a factor of production has no innovative role in classical economic conception. The economy is designed as a circular flow in a mechanical fashion and the function of the entrepreneur is statically restricted to the optimisation and allocation of resources.

Classical Conception of the Entrepreneur as an Elusive Figure

The Physiocrats emphasised the economics of technical change and the diffusion of new technology in a society. However, this emphasis was in the traditional, and not evolutional, sense. The Physiocrats, particularly Quesnay and Turgot, followed the footsteps of Sir William Petty in believing that labour is the father and land is the mother of production. Quesnay and Turgot were also influenced by Confucianism, while they put the Physiocrat doctrines into practical economic life as anti-mercantilism (Bodde 1948).

Quesnay's Theory of Growth shows the value of land and agriculture, which had been superseded by the inefficient Mercantilist policies for several decades. Quesnay saw private enterprise as a key factor of

development, together with amenable state policy. The function of private enterprise and the state performs better when they are together in a strategy of economic development (Muller 1978).

Adam Smith asserted in *Wealth of Nations* (1776) that gains from specialisation can be classified into two groups, such as dexterity of workers as a time-saving feature, and invention of new machinery. Although these factors are crucial for economic change, they are not catalysts for creation of innovative entrepreneurial activity in the modern view of the economic world. According to Smith, division of labour was an organisational innovation of a pin factory. This analysis can be extended to all kinds of composite commodities of modern times such as automobiles and cell phones. The production efficiency of a particular model of cell phone depends on the division of labour. However, the invention of a handy design for a new model of cell phone is up to the innovative entrepreneur.

Albeit that technological change was not totally ignored in the works of classical economists, the entrepreneur as an innovator was still not on the scene. Technological change remained in the background of the classical economic analysis, such as in the work regarding population growth by Malthus and the analysis of diminishing returns of the land by Ricardo. The innovative entrepreneur was to wait to come out of the shadows of time until the *fin de siècle*.

The Schumpeterian Innovator and Marshallian Evolutionary Economic Change

Schumpeter, in *The Theory of Economic Development* (1912), introduced the entrepreneur as an innovator with a dynamic and endogenous role to the economics scene. According to Schumpeter, the general equilibrium system of neoclassical economics is mechanical and concerned with statics or comparative statics rather than dynamics. The innovative entrepreneur thinks of and invents new ways of doing business or reorganises old styles of production in such a way that it becomes more efficient than before.

Schumpeter makes a distinction between different kinds of reaction to changes in economic conditions by type of entrepreneurial spirit (Schumpeter 1947). The first kind of reaction to imitative entrepreneurial spirit is *adaptive response* and the second is *creative response*. The distinction is in essence that of imitation and innovation in production. In business, the innovative entrepreneurial spirit is the leader, and the imitative entrepreneurial spirit is the follower.

Among the neoclassical economists, Alfred Marshall was the first economist who realised the evolutionary aspect of economics in a dynamic structure. According to Marshall (1890), evolutionary change was an irreversible process that occurred as an organic growth rather than quantitative or mechanical change. Marshall's theory of firm figures out productivity increase due to entrepreneurial endeavour. Under full competition, free market entry provides profit opportunities for all. In order to minimise the cost of production, producers endeavour to find more efficient ways to produce and thereby develop new ideas, improve quality, etc.

In order to capture the dynamic nature of endogenous growth and development of the economy, the entrepreneur was to be redesigned as an innovator in an endogenous model. Schumpeter paid tribute to Marshall's understanding of the dynamic functioning of innovative entrepreneurship in terms of evolutionary change. The economics of technological change is of structural (i.e. endogenous), dynamic, continuous, novelty-driven and qualitative change as a part of "history-dependent process of organic growth" (Marshall 1898, pp. 42–43).

The Kaleckian Approach to Time in Innovative Activity

The Kaleckian approach differs from the Schumpeterian approach in terms of investment demand decisions of innovative entrepreneurs. According to Kalecki (1968), innovative entrepreneurial activity works in spurts with intangible investment in the short-run. Successive short periods refer to points in time that are *capable of being decomposed into infinitesimal steps* (Schumpeter 1928, p. 365).

Intangible investment is a non-technological component of innovative creativity. As opposed to the secular (or long-run) economic growth path of the Schumpeterian approach with tangible investment in capital accumulation, a Kaleckian approach emphasises the human factor and scientific knowledge as drivers of economic growth in the short-run: "Through this process of innovation, together with innovation-induced profits (or other financial instruments) a dynamic secular growth path is generated" (Courvisanos 2012, p. 7).

According to Kalecki, long-run economic growth is composed of short innovative time periods occurring one after the other, which is "a slowly changing component of a chain of short period situations" (Kalecki 1968, p. 263).

In the Kaleckian approach, the entrepreneur enters the scene as a creative human being in the process of innovation and produces new ideas, which in turn become intangible investments in human capital accumulation. Kalecki calls this kind of change "exogenous" innovation since it is driven from outside the economy by a creative representative individual who performs innovations in an intense manner.

Whilst the intensity of innovations increases, new ideas and inventions take part in the production process. As far as Kaleckian conceptions are concerned, innovation comprises technological and non-technological components with tangible and intangible investments to the capital and human capital accumulation. This is what is called the Kaleckian–Schumpeterian synthesis in theoretical literature of evolutionary economics (Courvisanos and Mackenzie 2014).

Schmookler and Industry-Establishing Inventions

Schmookler (1962) reconciled the demand-side and supply-side arguments of technological change, asserting that the market mechanism, in effect, produces technological innovations. In Marshallian metaphor, the demand for and the supply of innovations operate together interactively and instantaneously like the two blades of scissors work together to cut paper. According to Schmookler, industry-establishing inventions as determinants of technological change are influenced by complex socioeconomic changes.

Schmookler also furthered the traditional cost and benefit analysis of the ordinary production of goods and services to capture the nature of innovative activities. According to this analysis, "the essential point is that the incentive to make an invention, like the incentive to produce any other good, is affected by the excess of expected returns over expected costs. Scientific progress may reduce expected costs and so increase the probability that a given invention will be sought and made. However, every invention represents a fixed cost, and the expected benefits from it vary with circumstances" (Schmookler 1962, p. 19).

Learning-by-Doing and the Endogenous Theory of Changes in Knowledge

Arrow (1962) searched for the causes and consequences of production of knowledge using the term 'learning-by-doing', which is borrowed from psychology. In Arrow's work, learning as an experience was formally introduced into neoclassical economic theory.

The concept of knowledge as a result of learning was asserted as underlying the production function and this knowledge was embedded into the new capital goods in line with Abramovitz (1956) and Solow (1957). The economics of technological change is linked to experience in production and no specific function for an innovative entrepreneur as a separate entity and an active economic agent is defined.

Arrow suggests "an endogenous theory of the changes in knowledge which underlie intertemporal and international shifts in production functions" (Arrow 1962, p. 155). But in his paper, the element of time is not taken endogenously; rather, it is taken intertemporally and thereby exogenously. The intertemporal analysis is not a dynamic but a pseudodynamic neoclassical model that can best be described as comparative statics.

In order to endogenise the element of time into a formal economic model, the arrow of time is to be treated as irreversible as it is in the real world. The representative individual's perception and apperception of experiences and their strategic interaction with other economic actors in the business of economic life play a significant role in the learning process. This requires a complex analysis with strategic interaction of

learning economic agents in markets as well as networks, for exchange of knowledge also happens beyond the traditional borders of markets in contemporary societies.

Baumol and the Theory of Entrepreneurship

Baumol (1968) follows the line of the 'Schumpeterian innovator' and points out the differences between the entrepreneurial and managerial functions. According to Baumol, standard economic models describe the functions of the manager, who is rather mechanical and makes automatic hedonic calculations fit for equilibrium analysis. The production process in a traditional managerial view is summarised in the oft-quoted *modus operandi* of economic organisations: what to produce, how to produce and for whom to produce.

A passage from Veblen describes the mechanic managerial function of economic man in a hedonistic conception:

> The hedonistic conception of man is that of a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area but leave him intact. He has neither antecedent nor consequent. He is an isolated, definitive human datum, in stable equilibrium except for the buffets of the impinging forces that displace him in one direction or another. Self-poised in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down on him, whereupon he follows the line of the resultant. When the force of the impact is spent he comes to rest, a self-contained globule of desire as before. Spiritually, the hedonistic man is not a prime mover. He is not the seat of a process of leaving, except in the sense that he is subject to a series of permutations enforced upon him by circumstances external and alien to him. (Veblen 1898, pp. 389–390)

The entrepreneur who exercises charismatic leadership in the business with brilliant innovations has hitherto been absent from the literature of economics: "In the writings of the classical economist his appearance was frequent, though he remained a shadowy entity without clearly

defined form and function" (Baumol 1968, p. 64). Since the entrepreneurial function is an important component of economic growth, the nature of the production function of a standard Solow (1957) model with capital and labour inputs is deficient. The hand of the entrepreneur is literally invisible in the process of production. This is accordance with the fact that the entrepreneur in formal neoclassical economic models is absent: "the Prince of Denmark has been expunged from the discussion of *Hamlet*" (Baumol 1968, p. 66).

In order to eliminate the entrepreneur's absence from neoclassical economic theory and integrate the theory of entrepreneurship as a dynamic function of innovative entrepreneur into the neoclassical system of economics, Baumol (2010) introduced an optimality algorithm in a decision model of innovative entrepreneurs.

Approaches to Innovation Systems and Paradigm Shifts

Approaches to innovation systems can be divided into two main groups according to their treatment of the element of time as static or dynamic. The static system of innovation approaches stemmed from the works of classical economists who take time as exogenous in their models. On the other hand, modern scholars who focused on the evolutionary theory of economic growth articulated the dynamic system of innovation approaches by treating time somewhat endogenously in their models.

Due to certain inadequacies of neoclassical economic growth theory, the true nature of technological advance and change has been debated among evolutionary economics scholars. In line with neo-Schumpeterian economic thought, and like Marshall's biology analogy of the dynamic economic model, technological progress in a society is to be viewed more realistically as an intricate and complex system in which different parts of economic machinery interact together with close connection. In this sense, institutions and innovative entrepreneurs play an important role as a function of innovation systems.

The innovation systems comprise different approaches such as the static, national, technological, network and development block systems of innovation approach. These systems approaches make use of diverse features of innovation from different perspectives in economic phenomena.

Static Systems of Innovation Approaches

One of the earliest economic static systems of innovation approaches stemmed from the Physiocratic school of economics. François Quesnay's *Le Tableau Économique* (1758) depicts the flows of agricultural and manufactured output. In Quesnay's model there are three economic agents, each of which consists of a social class. The "Proprietary" class possesses the ownership of land and real property. This class is *rentier* in the strict sense of the word used by Keynes (1936) in his *magnum opus* book *The General Theory of Employment, Interest and Money*. The "Productive" class consists of agricultural labourers who work on the land for a stipend. Finally, the "Sterile" class comprises intermediaries who are not directly involved in production process but act in the market as dealers and merchants. Quesnay's *Economic Table* became a standard model for the Physiocrat school of economics.

Another static system of innovation approach is Leontief's (1941) input–output analysis. This simplistic system shows the flow of goods and services throughout industry in an input–output matrix. However, this model is concerned with the real sector of the economy and thus the flow of funds in the financial sector is not integrated into the input–output matrix. Mohammad Osman Gani (2003), a pupil of Leontief and Baumol, improved the input–output system to encompass real as well as financial sectors in his book *Foundations of Economic Science*. In his consistency analysis, Gani deals with the dependencies of goods and services at the industry level. He also deals with the dependencies of payments in a separate section of this book entitled "Analysis of Pensation", in which he deconstructs the payment system into a fund matrix and searches for symmetry in payment matrices.

One of the most famous static systems of innovation approaches was invented by William Philips in 1949 to show the monetary circulation in the economy via hydraulic macroeconomics. The system works with the Philips Machine, also known as the Monetary National Income Analogue Computer (MONIAC). The machine was constructed with a fluidic logic in the same way that water flows from one particular level to another in a closed static system; the liquidity of money in the economy with the flow of production and consumption resembles that of water. Philips (1950) depicted and described in detail the working of the Philips Machine as a mechanical tool to analyse economic dynamics.

National (Learning) Systems of Innovation Approaches

Just like the flow of funds—or, more broadly speaking, money in the financial system, which is modelled by the Philips Machine as a static innovation system, and the flow of goods and services in the input–output analysis of Leontief—the national, regional or sectoral systems of innovation approaches depend on the flow of knowledge in an economy. Diffusion of knowledge in the knowledge-based economies improves the innovative activity at the national level. Knowledge flows in the economy in two forms. The first form of knowledge is *tacit knowledge*, which is also known as know-how and is defined as all kinds of practical and technical knowledge in the production, management and human relations departments in a national economic system. This form of knowledge flows in the economy in an informal way. The second form of knowledge is *codified knowledge*, which is a set of information put into a model framework to be useful to economic agents. Diffusion of codified knowledge or information is essential for innovation. Thus, in general, the national systems of innovation approaches depend on the flows of technology and information in an economy on a national level.

The Organisation for Economic Co-operation and Development (OECD) is one of the institutions that stresses the importance of innovation for economic development in the contemporary world.

According to the OECD, there are four types of information flows in national innovation systems. Information flows (1) through interactions of economic agents and enterprises in their research and development (R&D) activities and technical partnerships; (2) through interactions of economic agents, enterprises, public and private institutes, universities, research centres, etc.; (3) via the diffusion of technology and knowledge into enterprises by introduction and adoption of new machinery and equipment in production process; and (4) with the flow of human resources or personnel mobility (OECD 1997).

When we view the national systems of innovation from an historical perspective, it is necessary to drift far from the shores of the mainstream as every new idea has its roots in the distant past. Georg Friedrich List, the founder of German historical school, developed the term 'National System of Innovation', which originated from 'National System', also known as 'The American School' based on Hamiltonian economic programme set by Alexander Hamilton.

By and large, definitions of national innovation systems in the literature differ from one approach to other in dimension as well as from one perspective to another in time. Freeman (1987) points out the role of institutions in public and private sectors; in this approach, technology and knowledge are diffused via the interactive network of institutions in society. Edquist and Lundvall (1993) assert that the national system of innovation is embedded in the institutions and economic structures through which technology and knowledge diffuse to society.

On the other hand, Patel and Pavitt (1994) concentrate on technological learning as 'change-generating activities' within national institutions. Niosi et al. (1993) developed a definition based on interaction between various parts of society such as public and private firms, universities, government agencies, etc. This interaction can be technical, commercial, legal, social and financial. As a result of interaction between economic agents, the learning process commences and experimentation occurs. Learning is the process of reorganising the data and information to form an innovative idea or knowledge, and then put it into practice for productive purposes. "Learning, particularly interactive learning, has been the leitmotif of national systems of innovations from the start" (Niosi 2002, p. 292).

Essentially, systems of innovations by their very nature are learning systems in national economies, and institutions disseminate knowledge to make learning more effective (Niosi 2002). Edquist and Johnson (1997) also saw interactive learning as a source of and catalyst for innovative activities in national economies.

The Technological Systems of Innovation Approach and the Dynamic Function of Innovative Entrepreneurship

The concept of technological systems was coined by Hughes (1983). Hughes doesn't clearly define the technological system, but rather borrows from Martin Heidegger's definition of technology as "an ordering of the world to make it available as a standing reserve poised for problem solving, and therefore, as the means to an end" (Heidegger 1977, p. 19). Definitions of technology differ between simple and difficult levels of analysis in terms of the point of view and depth of the theoretical background. Technology, in a nutshell, is the practical application of knowledge. According to Rogers (2003), "a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome" (Rogers 2003, p. 13).

On the other hand, Carlsson and Stankiewicz (1991) adopt another definition of technology that specifies the function of institutions and interacting agents in a dynamic network in the context of the social and economic system: "A technological system is defined as a dynamic network of agents interacting in a specific economic/industrial area under a particular institutional infrastructure and involved in the generation, diffusion, and utilization of technology. Technological systems are defined in terms of knowledge/competence flows rather than flows of ordinary goods and services" (Carlsson and Stankiewicz 1991, p. 93).

The technological systems approach takes place in the centre of the innovation systems idea. This approach concentrates on the role of technology and technological change as an important factor of economic progress and development. In neoclassical growth models, technology is

generally taken to be an exogenous variable in the model. The nature and function of technological systems are not truly understood without in-depth analysis of innovation and innovative entrepreneurship. The effect of technological systems of innovation reaches far beyond the national systems. In an era of globalisation, technological change and progress are international phenomena. Interdependencies of national economies and industries render borders obsolete. Social and economic structures, institutions and organisations determine the technological systems of innovation at an international level.

The structure of the technological systems comprises of (i) institutions, (ii) actors and (iii) technological factors. Clear-cut definitions of these important components of the structure of technological systems will provide the reader with the rudiments to understand the intricate interconnections between them:

1. *Institutions* are building blocks in innovation systems. Technology is diffused through institutions into the economy. Therefore, in developing countries, institutional and structural reforms are very important for economic development. The technological progress is not possible without institutional renewal or reform in developing countries.
2. *Actors* are economic agents who interact in markets and networks. An innovative entrepreneur is an economic agent who has new ideas to invent new ways of production by effectively creating, using and diffusing new technologies.
3. *Technological factors* are the technical infrastructure of institutions. They are determined by the process of knowledge accumulation and diffusion in a society, and assessed according to the cost of acquiring new information in the market.

Since society and the economy are like a living organism, the nature of the structure of technological systems is dynamic rather than static; the components of the structure of technological systems evolve over time. These system components are physical artefacts and legislative artefacts, organisations such as manufacturing firms, utility companies, investment banks, natural resources such as coal mines, books, articles,

university teaching and research, inventors, industrial scientists, engineers, managers, financiers and workers (Hughes 1990).

According to Perez (2004), the technological systems of innovation involve interconnected self-reinforced processes of change and adaptation of the economic, cultural and institutional environment to the requirements of dynamic radical innovations, and these are enumerated as follows:

1. Adaptation of an economic environment requires the development of industrial infrastructure, suppliers and distributors of market products, maintenance services, etc.
2. Adaptation of the cultural environment corresponds to the learning process of customers, dealers, managers, producers, technicians, engineers, etc.
3. Adaptation of the institutional environment comprises the development and deployment of institutional reforms in a transition or shift to the new technology for middle-income countries.

Since technological change is a dynamic process, interactions of agents in a specific economic environment create conditions for learning. Actions of learning and evolution move *pari passu*, and they are the cause of the general locomotion of social and economic sea change. For a further analysis, this relation can be formulated in such a way that learning is a function of evolution. Learning happens in the exchange of ideas, knowledge and information. The exchange of available information in networks of markets is essential for innovation. In fact, what makes the structure of a technological system dynamic and evolutionary is learning-by-doing and learning-by-using by real-life economic agents that interact together in a strategic environment.

Hence, the dynamic function of an innovative entrepreneur can be fulfilled effectively only by learning because when an economic agent 'learns' a new way of production or handling a difficult situation in a better and more practical manner in the process of production, it is not possible for that economic agent to 'unlearn' that experimentation later on. Once something is learned, the arrow of time cannot be reversed to repeat it. If something can be repeated from the outset, then this

process is comparatively static, not dynamic. In the context of technological systems of innovation, the economic agent we deal with is only the innovative entrepreneur.

On the other hand, the *economic competence* of innovative entrepreneurship makes an important difference in the intensity of innovative activity as learning capacities differ from one individual entrepreneur to another. The economic competence of an innovative entrepreneur can be defined as his or her abilities to generate and make use of new technologies and thereby take advantage of business opportunities (cf. Carlsson and Stankiewicz 1991, p. 101).

Finally, the innovative entrepreneur becomes, so to speak, a dynamic economic entity, to exchange information, create new ideas and generate opportunities, adapt to an ever-changing socioeconomic environment within the framework of institutional economic structures, accumulate knowledge and eventually *learn* how to transform it into innovation. For this reason, it takes more than an ordinary *homo economicus* of neoclassical theory endowed with static skills such as maximisation and optimisation to become an innovative entrepreneur who acts in a dynamic and evolutionary context. The rise of real-life innovative entrepreneurship witnesses the death of fictional *homo economicus* in twenty-first century's economic thought.

The Network Systems of Innovation Approach: Learning as an Intangible Engine of Economic Growth

As national economies and industries are interdependent on each other in the increasing trend of globalisation and technological change, functions of relationships and forms of technological collaborations between economic actors seem to be intertwined with each other more than ever in complex socioeconomic systems. Unlike the traditional neoclassical thinking, the role and extent of the markets is not limited to distribution and allocation of goods and services. The network of markets gradually turn out to be strategic environments surrounded by institutions in which exchange of information, knowledge and ideas takes place. In a strategic environment, uncertainty is prevalent. To eliminate the

risks of uncertainty, decision-making becomes especially important for economic performance. Therefore, the network systems of innovation approach analyses the true nature and intricate behaviour of network of markets and their surrounding institutions under conditions of considerable uncertainty.

According to Stigler (1951), the degree of vertical integration is a function of "the extent of the market." In other words, "the extent of the market", or the rate of growth of the market, determines the degree of vertical integration of economic agents (innovative entrepreneurs), each of which is endowed with different levels of economic competences. In contrast, Langlois (1989) asserts that the rate of technological progress, rather than the rate of growth of the market, determines the degree of vertical integration. However, both of these formulations are deficient and require amendment as the rate of technological progress is also determined by the innovative entrepreneurship. If the degree of vertical integration is a function of technological progress, then the degree of technological progress is a function of innovative activity. So, the degree of vertical integration can be defined as an indirect function of innovative entrepreneurship in evolutionary economics.

Evolutionary economics are comprised of both the dynamic and learning behaviours of individual agents. At this particular point, a call for urgent action appears: the function of innovative entrepreneurship that is ignored by the standard neoclassical growth models should be integrated into the endogenous growth models of evolutionary economics. In essence, it is quite clear that learning is an intangible engine of economic growth. For this purpose, a learning model of innovative entrepreneurship is a necessary analytical tool to analyse economic growth.

What are the boundaries of markets? Since networks can become quite complex in size and in intricacy, interactions of economic agents are difficult to decompose. Håkansson and Johanson (1988) also bring attention to this issue and point out the informality of networks—the boundaries of the networks go far beyond the formal market structure of economics. This is because economic agents have different perspectives, incentives and intensions, different behaviours and quaint attitudes towards the *modus operandi* of businesses. Networks extend the orthodox boundaries of neoclassical market conception and offer

informal heterogeneous marketplaces for innovative entrepreneurs to exchange ideas, information, experimentation and knowledge in a better and more creative manner. Thus, learning can be conducted effectively and efficiently in extended networks.

The patterns in the evolutionary network economy are parallel to the patterns of the competitive market economy. The behaviour of interactive economic agents in the context of dynamic socioeconomic systems can be observed in evolutionary network formations (Batten 1994). Economic networks are shaped according to the flow of physical products and of knowledge. Therefore, we can divide networks mainly into two types. The first are production networks in a traditional sense, i.e. the exchange of physical products such as goods and services and material resources of production. The second type of networks are about knowledge, information, innovation and technology networks. On the other hand, Gelsing (1989) defined four types of industrial networks: (i) networks between users and suppliers; (ii) the industrial networks of vertical production chains; (iii) production networks (*filiéres*); and (iv) knowledge networks. We can add 'learning networks' as a fifth type, in which economic agents in general and innovative entrepreneurs in particular interact and exchange information to create innovative ideas.

However, networks are complex economic systems and are not easy to define within a few types, titles or classifications. Carlsson and Westing (1994, p. 4) classify economic networks according to a large set of criteria, the main variables of which are as follows:

- The functional content and purposes of the network
- The level of aggregation
- The localisation and extension in space
- The topology and connectivity of internal and external relations
- The degree of formalisation and stability of individual relations and assignments
- The division of power in the network
- The durability and time scale of changes in relation to the environment
- The dynamics between actors, in relation to external actors, and in relation to the function of the network.

From the perspective of the innovative entrepreneur, the last three classifications are especially important. 'The division of power in the network' corresponds to the competitive conditions and strategic environment of the market structure. Accumulation of power by a few groups in the network hampers optimum allocation of information and the flow of knowledge. This, in turn, prevents learning, creates a kind of network crisis and results in a process of 'disinnovation'. 'The durability and time scale of changes in relation to the environment' are related to the evolutionary and institutional aspects of the innovative economy. Finally, the last classification of 'the dynamics between actors, in relation to external actors, and in relation to the function of the network' focuses on the learning process in terms of the growth of complexity in the development of communication and information systems.

Another theoretical contribution to the theory of network approach is that of Kobayashi and Andersson (1994). They introduce a dynamic input–output model with endogenous technical change to analyse *interactions between knowledge accumulation and economic development*. Their model integrates the 'knowledge sector' into the traditional dynamic input–output system. Since the innovative entrepreneur is an active player in the 'knowledge sector', any improvement beyond traditional dynamics requires a further analysis of learning behaviour among interactive economic agents.

The Development Block Systems of an Innovation Approach: Dahmén's Disequilibrium Dynamics Analysis

Dahmén's development blocks focus on the dynamics of disequilibrium analysis in relation to exchange of information and cooperation of interactive economic agents (Dahmén 1989). The development blocks are biological in the sense of the Marshallian biological analogy of economic science. The very nature of disequilibrium analysis corresponds to the evolution of economic entities from one equilibrium point in time to another. In a heterogeneous market structure, economic agents have different abilities in terms of processing available information sifted from institutions and dismissed through the channels of networks, and thereby learning from the strategic structure of economic environment.

The formal definition of a biological development block is "a sequence of complementarities which by way of a series of structural tensions or disequilibria may result in a balanced situation" (Dahmén 1989, p. 111). The structure of production is based on the ever-changing interactions and relationship of economic agents. These dynamics transform industry and trade through a shift of technological paradigm. The sequence of disequilibria and structural tensions are closely related to the Schumpeterian creative destruction.

The disequilibrium in the economic system is caused not by exogenous shocks as generally modelled in a standard neoclassical macroeconomic framework, but by the stress and synergies of economic agents or rather innovative entrepreneurs whose actions reflect on technological trajectory. The 'old' equilibrium is distorted since it represents a status quo—and not an optimum point—in terms of production and distribution techniques to teach a more profitable and innovative 'new' equilibrium in the economy and a new paradigm in technology.

According to Perez (2004), the process of creative destruction in long wave transitions is self-reinforcing. The creative destructive cycle starts with the exhaustion of the prevailing paradigm and then follows a path through economic and social pressure for change that paves way for development. Recognition of the new technological potential is essential to get out of the bottleneck created by the inertia of the old socio-institutional framework. Construction of the new paradigm from socio-economic pressure facilitates the diffusion of the new 'common sense', which is a social unanimity to accept and adopt the change. Socio-political process leads to the construction of the new socio-institutional framework. As a result, the relaunching of economic growth allows deployment of the new technological potential (Perez 2004, p. 19).

A network is turned into an economic development block by the vision and creative talent of an innovative entrepreneur (Carlsson and Stankiewicz 1991). The strategic complementarity among economic agents is also important for the construction of a new equilibrium after the Schumpeterian disturbance. Price and cost signals are key factors to convey information regarding an inefficient market situation.

In heterogeneous markets, there are different types of economic agents and entrepreneurs. Hultén and Mölleryd (2003) describe Schumpeterian,

Austrian, Kirznerian and Hughesian entrepreneurships. Schumpeterian entrepreneurship is defined as follows: "the entrepreneur and his function are not difficult to conceptualize: the defining characteristic is simply the doing of new things or the doing of things that are already being done in a new way (innovation)" (Schumpeter 1947, p. 151); Schumpeter points out the difference between the adaptive and creative responses to innovations. Austrian entrepreneurship is defined by Von Mises (1996), who conceives entrepreneurial activity as a creative force of change in the economic system. According to Von Mises, markets never perform under full information assumption as, since knowledge and information are flow concepts, they are by their very nature incomplete. Hence, disequilibrium is not an exception but rule. Kirznerian entrepreneurship highlights the importance of learning; in Kirszner's theory of entrepreneurship, market participants learn from each other. A Hughesian entrepreneur is the central figure who performs technological practice for innovation.

Concluding Remarks and Suggestions for Further Research

The role of the innovative entrepreneur in neoclassical economics is not well defined. We have analysed the function of innovative entrepreneurship from a historical and theoretical perspective on the one hand, and from an analytical and critical perspective on the other. By gathering together the different approaches to innovation systems in terms of the function of innovative entrepreneurship, we have redefined the traditional systems of innovation approaches, viz. static, national (learning), technological, network and development block systems of innovation approaches with the innovative entrepreneur in the central place. Whilst the earlier innovation systems approaches focus on the flow of goods and services throughout the economy, learning systems approaches point out the importance of the flow of knowledge through the channels of industrial and institutional systems.

The 'knowledge industry' and institutions are key factors in evolutionary economics for middle-income and developed countries. The

traditional borders of markets are broadened by the complex network of economic forces, and the role of economic agents in general and innovative entrepreneurs in particular vary with time and place due to the strategic interaction that results in learning and innovation. In neoclassical economics, the entrepreneur was capsulated in a black box. They were an elusive figure far from analytical and functional in economic life. But there is a crucial function of the innovative entrepreneur as a learning individual in economic development: they are an intangible engine of economic growth that is ignored in neoclassical growth theories.

In middle-income countries, improving the culture and education of innovative entrepreneurship should be the most important innovation policy. The transformation of production from imitative to innovative also requires structural reforms. Since institutions function as filters of information and knowledge, investment in institutional and technological infrastructures is necessary for economic development. Besides, creating a well-functioning innovation ecosystem can stimulate investment in innovative activities. The bottle-neck in fundraising for innovative production can be tackled via increasing savings and capital as well as human capital accumulation for innovation.

According to a recent report of the High Level Group on Innovation Policy Management (2013), effective innovation requires a set of seven key activities:

- Optimisation of the embryonic European innovation ecosystem
- Improving policy coherence
- Reducing the regulatory complexity and rigidity
- Eliminating obstacles and providing new funding for innovation
- Facilitating industrial cooperation and revision of competition law
- Taking an encompassing and inclusive view of intellectual property
- Increasing the innovation potential through user and consumer drive.

The functional integration of the innovative entrepreneur into the evolutionary growth theory is a challenge for future research. This can be done by constructing real dynamic endogenous models with the learning behaviour taken into consideration rather than pseudodynamic

models where learning doesn't matter. These are pseudodynamic models because without a robust learning model what is accomplished is just comparative statics, not dynamics. Modern evolutionary economics has adequate tools to open up the black box in which the traditional entrepreneur was enclosed, and to put them in the shoes of a living person in real life.

References

Abramovitz, M. (1956). Resource and output trends in the United States since 1870. *The American Economic Review*, Papers and Proceedings of the American Economic Associations. 46, 5–23. http://www.nber.org/chapters/c5650.pdf. Accessed April 18, 2017.

Arrow, K. (1962). The economic implications of learning by doing. *Review of Economic Studies, 29*(3), 155–173.

Batten, D. F. (1994). The evolutionary network economy: Historical parallels from Europe and Japan. In B. Johansson, C. Karlsson, & L. Westin (Eds.), *Patterns of a network economy* (pp. 91–98). Berlin: Springer-Verlag.

Baumol, W. J. (1968). Entrepreneurship in economic theory. *The American Economic Review, 58*(2), 64–71.

Baumol, W. J. (2010). *The microtheory of innovative entrepreneurship*. Princeton: Princeton University Press.

Bodde, D. (1948). *Chinese ideas in the west*. Washington: American Council on Education.

Carlsson, B., & Stankiewicz, R. (1991). On the nature, function and composition of technological systems. *Journal of Evolutionary Economics, 1,* 93–118.

Carlsson, B., & Westing, L. (1994). Patterns of a network economy—an introduction. In B. Johansson, C. Karlsson, & L. Westin (Eds.), *Patterns of a network economy* (pp. 91–98). Berlin: Springer-Verlag.

Courvisanos, J. (2012). *Cycles, crises, innovation: Path to sustainable development —A Kaleckian-Schumpeterian synthesis*. Cheltenham: Edward Elgar.

Courvisanos, J., & Mackenzie, S. (2014). Innovation economics and the role of the innovative entrepreneur in economic theory. *Journal of Innovation Economics & Management, 2*(14), 41–46.

Dahmén, E. (1989). Development blocks in industrial economics. In B. Carlsson (Ed.), *Industrial Dynamics* (pp. 109–121). Boston: Kluwer Academic Publishers.

Edquist, C., & Lundvall, B. Å. (1993). Comparing the Danish and Swedish systems of innovation. In R. R. Nelson (Ed.), *National innovation systems—A comparative analysis* (pp. 265–291). Oxford: Oxford University Press.

Edquist, C., & Johnson, B. (1997). Institutions and organizations in systems of innovation. In C. Edquist (Ed.), *Systems of innovation: Technologies, institutions and organizations* (pp. 41–63). London: Pinter Publishers.

Freeman, C. (1987). *Technology and economic performance: Lessons from Japan*. London: Pinter.

Gani, M. O. (2003). *Foundations of economic science*. Dhaka: Scholars.

Gelsing, L. E. (1989). Knowledge networks: Industrial flexibility and innovation. In F. Borum & P. H. Kristensen (Eds.), *Technological innovation and organizational change—Danish patterns of knowledge, networks and culture*. Copenhagen: Danish Social Science Research Council.

Håkansson, H., & Johanson, J. (1988). Formal and informal cooperation strategies in international industrial networks. In F. J. Contractor & P. Lorange (Eds.), *Cooperative strategies in international business*. Lexington: Lexington Books.

Heidegger, M. (1977). *The question of technology and other essays*. (W. Lovett, Trans.). New York: Harper and Row.

High Level Group on Innovation Policy Management. (2013). Report & recommendations. Brussels: High Level Group on Innovation Policy Management. Accessed March 10, 2017.

Hughes, T. P. (1983). *Networks of power: Electrification in western society, 1880–1930*. Baltimore: The Johns Hopkins University Press.

Hultén, S., & Mölleryd, B. (2003). Entrepreneurs, innovations and market processes in the evolution of Swedish mobile telecommunications industry. In J. Metcalfe & U. Cantner (Eds.), *Change, transformation and development*. Berlin: Physica-Verlag.

Kalecki, M. (1968). Trend and business cycles reconsidered. *The Economic Journal, 78*(310), 263–276.

Keynes, J. M. (1936). *The general theory of employment, interest and money*. London: Macmillan.

Kobayashi, K., & Andersson, A. E. (1994). A dynamic input-output model with endogenous technical change. In B. Johansson, C. Karlsson, & L.

Westin (Eds.), *Patterns of a network economy* (pp. 91–98). Berlin: Springer-Verlag.

Langlois, R. (1989). Economic change and the boundaries of the firm. In B. Carlsson (Ed.), *Industrial dynamics* (pp. 85–107). Boston: Kluwer Academic Publishers.

Leontief, W. (1941). *The structure of American economy, 1919–1929: An empirical application of equilibrium analysis*. Cambridge: Harvard University Press.

Marshall, A. (1890). *Principles of Economics*. London: Macmillan.

Marshall, A. (1898). Distribution and exchange. *The Economic Journal, 8*(29), 37–59.

Von Mises, L. (1996). *Human action: A treatise on economics*. Bettina Bien Graves (Ed.), (4th rev. ed.) Irvington-on-Hudson: Foundation for Economic Education.

Muller, A. L. (1978). Quesnay's theory of growth: A comment. *Oxford Economic Papers, New Series, 3*(1), 150–156.

Niosi, J., Saviotti, P., Bellon, B., & Crow, M. (1993). National systems of innovation: In search of a workable concept. *Technology in Society, 15*(2), 207–227.

Niosi, J. (2002). National systems of innovations are "X-Efficient" (and X-Effective): Why some are slow learners. *Research Policy, 31,* 291–302.

OECD, (1997). *National innovation systems*. Committee for Scientific and Technological Policy.

Patel, P., & Pavitt, K. (1994). National innovation systems: Why are they important, and how they might be measured and compared. *Economics of Innovation and New Technology, 3,* 77–95.

Perez, C. (2004). Technological revolutions, paradigm shifts and socio-institutional change. In E. Reinert (Ed.), *Globalization, economic development and inequality: An alternative perspective*. Cheltenham: Edward Elgar.

Philips, A. W. (1950). Mechanical models in economic dynamics. *Economica, New Series, 17*(67), 283–305.

Quesnay, F. (1758) *Le tableau économique*. (1st ed.) (Tableau with base of 400 l., accompanied by *Remarques sur les variations de la distribution des revenus annuels d'une nation*) [manuscript].

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: The Free Press.

Stigler, G. (1951). The division of labor is limited by the extend of the market. *Journal of Political Economy, 59,* 85–193.

Schmookler, J. (1962). Economic sources of inventive activity. *Journal of Economic History, 22*(1), 1–20.
Schumpeter, J. A. (1912). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
Schumpeter, J. (1928). The instability of capitalism. *The Economic Journal, 38*(151), 361–386.
Schumpeter, J. (1947). The creative response in economic history. *The Journal of Economic History, 7*(2), 149–159.
Solow, R. M. (1957). Technical change and the aggregate production function. *Review of Economics and Statistics, 39,* 312–320.
Veblen, T. (1898). Why is economics not an evolutionary science? *The Quarterly Journal of Economics, 12*(2), 373–397.

Collaborative Governance: Working Through Misaligned Interests

Nada Kakabadse and Andrew Kakabadse

Introduction

The new 'international economic order' that sprang from the 'old world order' has spawned an integrated world economy. However, it has also created a 'new international political disorder' through attending to the ambitions of resource owners at the expense of resource recipients.

Corporate governance models the world over resemble, in their power structures, their country's institutional socio-political governance in terms of capital markets development and/or investors' legal protection. In so doing, the push of governance has been for the protection of shareholders, a perspective strongly promoted by Anglo-American dispersed ownership structures.

N. Kakabadse (✉) · A. Kakabadse
Henley Business School, The University of Reading, Oxfordshire, UK
e-mail: n.kakabadse@henley.ac.uk

A. Kakabadse
e-mail: a.kakabadse@henley.ac.uk

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_5

In effect, there have been numerous attempts to transplant Anglo-American corporate governance logic to concentrated ownership structure contexts (as in Europe championing the socially distributed model of governance) underpinned by a few critical large shareholders in the form of families in continental European countries, Japan, Asia and Latin America. Such intervention has typically ended in a decoupling from their accepted local governance adaptation, but to no good effect. The 'one rule fits all' of the Organisation for Economic Co-operation and Development (OECD) (2004) principle drawing on the logic of Cadbury (1992) is being deemed the correct way forward against evidence to the contrary.

Ownership structures with supporting control mechanisms are particularly relevant in the international arena with the expansion of multinational entities (MNEs) or transnational corporations (TNCs), where the capacity to monitor such enterprises becomes more difficult. The governance of the multinational firm is based on the widespread ownership of parent stock, distributed across and listed on various exchanges outside the home country. Typically, stock drifts away from the public toward large institutional investors. Thus, the ultimate purpose of global redistribution fails as shares ultimately return to the home country. In other words, the simple distribution of parent company stock abroad is not an effective measure to achieve true multinationalism.

This chapter examines forms of ownership structures, including that of private–public partnership entities and their impact on the rights of stakeholders and firms' sustainability prospects.

A review of company reports reveals that companies tick all of the 'right boxes' and fulfil all of the regulatory requirements using the 'right words' but do not provide the enticing story convincing shareholders of the thrust for innovation and entrepreneurship. For example, the Walker (2009) review found that the Institutional Shareholder's Committee (ISC) Code contained good principles enabling effective monitoring, but believed that the guarantees to abide by these provisions were insufficient. In order to address this deficiency, Walker recommended the renaming of the ISC Code as the UK Stewardship Code. The aim of the Stewardship Code was to inspire fund managers to play a more active role in the corporate governance of the entities on their books and to encourage service providers to abide by such requirements (Roach

2011). The Stewardship Code was published by the Financial Reporting Council (FRC) in July 2010 and was revised in September 2012 (FRC 2012). However, as noted by Roach (2011, p. 479):

> It is unfortunate that the world's first Stewardship Code was established on the basis of expeditiousness rather than on a desire to establish a comprehensive and forward-looking set of engagement principles and must therefore be regarded as a missed opportunity to encourage greater investor engagement, not only to the UK but also around the world.

The stewardship, as opposed to the protocol, approach to governance emphasises trust rather than control (Freeman and Evan 1990). Effective stewardship gives prominence to both rationality and value production, and as such attends to both mentoring and monitoring. It is this combination that enables meaningful strategic direction through attending to short-term disciplines and realising sustainable longer-term development (Freeman and Evan 1990).

As innovativeness is increasingly becoming critical for firms' competiveness, the involvement of the Board in the pursuit of such an orientation is fundamental (Zahra 1990; Zahra et al. 1999; Rindova 1999). Firm innovation is spawned through a collaborative and cumulative process of learning that requires a commitment of resources for an extended period of time supported by an engaged Board and stakeholders (Rajan and Zingales 1998).

With this in mind, attention is also given to Top Team and Boardroom dynamics in this chapter, concluding that the mentoring contribution of the Board is woefully lacking. We conclude by emphasising the need to delicately balance the monitoring and mentoring contribution of the Board in order to allow for collaborative governance as the critical means to realise enterprise sustainability.

Structure and Control

A map of the structure of global corporate control, captured by Swiss researchers (Vitali et al. 2011) using a global network analysis of a 2007 database listing of 37 million companies and investors in 194 countries

and analysing 43,060 TNCs and share ownerships that linked them, revealed that global corporate control has a distinct bow-tie shape. The dominant core of 147 firms or 'super entities' control 40% of the wealth in the network, whilst 737 firms control 80% of the network (Vitali et al. 2011). The top-ranked actors hold a control ten times bigger than could be expected based on their wealth. This in turn leads to an unstable environment through an unequal redistribution of wealth.

A new type of private–public–partnership (PPP) organisations based on self-governance and monitoring has emerged. These entities are the gatekeepers of governance, shaping governance ratings and influencing the media, shareholder activists and corporate raiders. These are the external corporate governance forces that shape how internal governance is structured. The political power that is held by such a small number of individuals impacts the planet significantly. As a result, few corporations become the most influential sources of political and economic power (Gourevitch and Shinn 2010).

Within this context, firms have been positioned as administrators of certain citizen rights, concerning social, political and civil rights for a range of stakeholders. In this 'extended' notion of corporate citizenship, firms serve as a 'channel' in addition to having their own role, meaning that they are 'active in citizenship and exhibit citizenship behaviours' (Kolk 2016).

From a 'quasi-government' perspective, the activities of firms serve as a substitute (or compensation) for missing public services. Moreover, corporations under the guise of 'investor protection', and through a system of private tribunals—the investor–state dispute settlement (ISDS) mechanism—allow corporations to sue governments when they feel that these rights have been breached by government policy or a court decision. Allowing corporations to sue governments for changing their laws prevents government from governing. For example, in 2014 Philip Morris, a tobacco giant, sued the governments of both Australia and Uruguay for billions of dollars for introducing regulations aimed at reducing smoking (McDonagh 2014).

With the context of resources in ever fewer hands and the corporation as not only the mechanism for wealth creation but also policy determination, innovation has been restricted. The emergent outcome of such development is that markets have little growth potential. An excess of capital is prevalent in the private sector, whilst government

strives hard to meet budget, thus accelerating the road to the bottom phenomenon.

With ever greater resources in ever fewer hands and operating in mature markets with little growth potential, how do certain corporations position themselves to realise a sustainable future and simultaneously display concern for their stakeholders? The increasing environmental 'turbulence', economic pressures, international investment patterns, business aggregations and the demand for uniform regulation, competitive neutrality and specialisation all require increased collaboration between corporate Boards, policy-makers and third-sector organisations. The need for collaborative governance predominates and provides the platform for stakeholder engagement and trust (Thomson and Perry 2006).

Our Research

Our research seriously challenges the fundamental platform of western thinking concerning leadership and strategy, which is 'get the strategy right'. The profound influence of the Chicago School of Economics, which adopted the philosophy of economic rationalism (Anderson and Harris 1996) pre-1920s to explain the behaviour of the firm in challenging conditions, has infiltrated the thinking of business schools, consulting organisations and more recently governments concerning governance and leadership. In principle, the notion of economic rationalism has the market as the legitimate arbiter and allocator of goods and services on behalf of society. Thus, the 'logic of the markets' view emerged that there is a distinctly right strategy to pursue based on the diligent gathering of evidence which concludes a 'rational' way forward as the 'right way forward', which has led to a three-step process, namely:

- Get the strategy right.
- Structure follows strategy.
- Cascade (sell/promote) the message down the line.

The fundamental assumption of 'get the strategy right' has spawned and justified the efficacy of the chief executive officer's vision and the image

of the outstanding Top Team, namely that of cohesion of thinking and deep collaboration between the key top players.

However, our research involving over 19,500 organisations across 34 countries, including Turkey, of Board/Top Team members and the general management population highlights:

- 34% of Top Teams do not reach a shared view on the vision, mission and strategy of the organisation, leading to dysfunctional, politicised behaviour at senior levels.
- 66% of senior management do not raise the uncomfortable issue and in so doing allow a slow deterioration of the enterprise.
- 82% of Boards are rated by their senior and general management as out of touch and not delivering value.
- In the UK, 85% of Board Members do not know and/or do not have a shared view on the competitive advantage of the firm on whose Board they sit. This raises serious concern about the quality of governance and strategic thinking underlying the decisions reached.

Our research emphasises the powerful impact of context, highlighting that each organisation is unique in terms of culture and orientation. In fact, only 33% of the world's enterprises realise a shared view on vision, mission and strategy, thus allowing for a sustainable future. In these enterprises, distinct attention was given to achieving engagement in context rather than particularly concentrating on 'getting the strategy right'.

Why does tension and disagreement predominate in so many private-, third- and public-sector organisations? In the private sector, evidence strongly points to the challenge of reaching a shared view of the nature of the competitive advantage of the firm. For third- and public-sector enterprises, equal challenge is experienced in determining the value that is/should be delivered to respective communities. Thus, in contrast to 'getting the strategy right', the area that requires attention is that of realising alignment of thinking and achieving meaningful engagement across stakeholders who hold and pursue contrasting objectives.

This makes the role and contribution of the Board as mediator distinctly significant. Yet our research highlights that only 18% of Boards win the respect of their management. The critical reason for such low

levels of engagement is the Board's emphasis on monitoring, namely the application of control systems and the adoption of protocols. Such a mindset goes back to the 1920s and the influence of Harvard Business School in their protecting of the interests of shareholders against a management that "could not be trusted" (Kakabadse 2015). Harvard Business School championed monitoring as the key lever of governance (Berle 1932). However, Harvard Law School (Dodd 1932), then and to this day, challenges such thinking as inadequate, emphasising that an out-of-touch Board delivers even less value by adopting protocols that do not capture the reality of the management's experience of turbulent markets (Kakabadse 2015). Dodd (1932) believed that directors should act for the community; Berle (1931) thought that they should act for the shareholders. In both cases, trust and collaboration remain central to corporate governance application. The reason for this is the Board's role in facilitating ways through complexity. Therefore, it is no surprise that Harvard Law School together with Cornell Law School strongly emphasise mentoring, namely the stewardship and guidance of the enterprise through ever-increasing complexity. Yet, despite its proclamation since the mid-1920s, this message has been ignored and side-lined. The philosophy of shareholder value rose to the status of governance primacy despite a mistaken interpretation of corporate law (Stout 2012; Smith and Ronnegard 2014). Although shareholders do not 'own' the firm, nor are they "the solo residual claimants, managers equally are not the legal agents of shareholders" (Stout 2012, p. 22). The notion that managers have a broader responsibility to stakeholders, e.g. employees, customers, suppliers and the community at large, never really took off and the little stakeholder sensitivity present in the system declined over time. The 1990 Business Roundtable policy statement reinforced the move from responsibility to stakeholders to an almost exclusive focus on shareholders (Khurana 2007, p. 32). The strategy of value extraction from employees, customers, suppliers and rival companies as prescribed by Porter's (1980) five forces has been slavishly pursued, making "the interests of the company incompatible with those of society" (Ghoshal et al. 1999, p. 12). As Ghoshal (2005, p. 85) observes, "Combine agency theory with transaction cost economics, add in standard versions of game theory and negotiation analysis, and the picture of the manager

that emerges is one that is now very familiar in practice: the ruthlessly hard-driving, strictly top-down, command-and-control focused, shareholder-value-obsessed, win-at-any cost business leader".

The consequences of this management philosophy has been that of value destruction, particularly evident in the financial crisis, where wealth was created by various multi-layered pyramids and other forms of 'phantom wealth', drawing on fictitious or overvalued assets rather than real wealth (Korten 2010).

The continued financial crises and the growing awareness of the social and environmental outcomes of such practice has spawned a call for new policy innovations and new types of enterprises led by entrepreneurs who promote and live sustainable entrepreneurship (Hall et al. 2010). A sustainable enterprise impacts on individual character, nurturing a moral and sustainable mindset. Leaving and reinforcing a sustainable moral *polis* has the power to ultimately reverse the current trend of selfish and dishonest corporate and individual behaviour into unselfish and honest intention and action. As Aristotle (2002) in the fourth-century BC observed, a good character is in part a matter of wanting and having the desire to be a good person, which impacts on the *polis* or society. Thus, moral responsibility requires, as Bauman (2008, p. 124) observed, facing up to and "taking on that responsibility, assuming responsibility for that responsibility, as a matter of choice".

New Opportunities and Realities

The neoclassical model of entrepreneurship that operates on the logic of creating value for the present is increasingly being recognised as not beneficial for society and the environment and particularly as not ensuring the well-being of future generations. Thus, sustainable entrepreneurial activity requires a new logic through which different outcomes are simultaneously and effectively pursued. In order to realise social, environmental and economic sustainability, the process of value creation needs to link the entrepreneurial contribution to growing value-creating enterprises which contribute to the sustainable development

of the socio-ecological system. Shepherd and Patzelt (2011, p. 137) define sustainable entrepreneurship as being "focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society". In this sense, sustainable entrepreneurship still has at its core the development of products and services in order to obtain economic gain (profit), but needs restraint in order not to deplete the environment and not to threaten the existence of future generations. In effect, "sustainable entrepreneurship must bring about externalities that constitute non-economic gain" (Kletz and Conuel 2017, p. 13). Both economic and social/environmental development coexist in the same organisation and are pursued concurrently in a sustainable manner. Herein lies the critical difference between classical for-profit entrepreneurship where focus is on economic gain and non-economic considerations are seen as constraints that must be coped with, whilst sustainable entrepreneurship that aims for social progress and environmental preservation is focused on both economic and non-economic gain (Kletz and Conuel 2017). Add to this disruptive technologies, which Schumpeter (1912/1934) observed as inherently disruptive and inducing "creative destruction", which a healthy economy needs to engender a disequilibrium that stimulates the process of adaption and renewal without which the economy becomes rapidly stagnant. The demand for a new management ideology and innovative policies and supportive governance are simply overwhelming.

Research increasingly draws attention to the significant relationships between sustainability performance and financial performance. Sustainability is no longer a marginal financial issue. Rather, sustainability is the umbrella that covers corporate finance and organisational performance through protective governance. Governance considerations are vital as this is the all-embracing philosophy and mode of working which determines the nature of competitiveness, strategy, performance, capital budgeting and operations (Table 1). Increasingly, investors as well as other stakeholders expect to see distinct attention paid to sustainability in the governance and stewardship of the enterprise.

Table 1 Realities and opportunities

Characteristics	Operating model	Emergent model
Economy model	Neo-classical (Chicago School)	Ecosystem economy (institutional economy; political economy, complexity economy)
Model assumption	Equilibrium (Nash equilibrium, order, determinacy, deduction, *stasis*)	Institutional evolution; non-equilibrium (contingency, indeterminacy, sense-making, opens to change, innovation)
Design approach	Top-down	Bottom-up (firm, industry, open system)
Tools	Transactional costs	Ecological/complexity approach (interconnectedness), design science (purpose)
Intellectual infrastructure (ideology)	Shareholder primacy (agency theory; managerial discretion; rational choice; neoclassical theory of the firm)	Stewardship (stakeholder theory; behaviour theory of the firm; discretionary action, evolutionary theory; anthropology, psychology; behavioural economics, etc.)
Rationality	Instrumental reasoning of self-interested individual satisfying their preferences	Bounded rationality, other regarding, relentlessly seeking fairness (selfishness is crowded out by other-regarding behaviour)
Homo	*Economicus*	*Sociologicus*, *reciprocans*
Successful strategy	Building defence against competitive forces; finding position where forces are weakest—Porter's five forces); cascading the message down through organisation	Engagement and alignment (cooperative basis of human enterprise)

(continued)

Table 1 (continued)

Characteristics	Operating model	Emergent model
Management practice	Code of practice based on instrumentalism—focus on turf, reputation and coalition; ruthlessly hard-driving, strictly top-down, command-and-control focused, value-obsessed, win-at-any—cost, value extraction, shareholder value maximisation	Code of practice focused on responsibility to/for others; practical reasoning; engaging, purposeful, common sense (human behaviour can be influenced by other motives; how individual can shape future direction; negotiations, consensus-seeking behaviours, re-directing narratives, and identifying achievable and inspiring goals
Consequences	Financialisation of society (primacy of financial service industry; 'too big to fail'); interests of firm incompatible with those of society	Ecologically sustainable firm satisfying societies' developmental needs and continuously evolving

Source Compiled from Kakabadse (2015), Arthur (2013), Ghoshal (2005), McLellan (1971), Porter (1980), Williamson (1998), Cyret and March (1963), Beechler (2014)

Notions of sustainability do not ignore shareholder value or 'economic viability', namely a concern with the flow of money and its usage (Slaper and Hall 2011). Although profit is not treated as the single target of sustainability entrepreneurs, being an economically viable enterprise still remains a main concern. Only through being financially viable can socio-ecological considerations deal with issues in society, as fulfilling individual and community needs such as human rights, gender and child labour and ecological issues such as climate change, ocean acidification, stratospheric ozone and environmental protection are a must.

With such a breadth of issues in mind, governance and policy have to adopt an integrative approach so that the enterprise has sustainability at the core of value creation addressing the long-term and benefiting stakeholders. Sustainability governance needs to bring stakeholder oversight to the Boardroom as well as correcting the current governance

weaknesses that prevent Boards from operating in the most effective manner. This, in turn, introduces greater complexity and brings focus onto non-equilibrium dynamics and evolutionary economics focusing on a world that is organic, positively developmental and context/history contingent in contrast to the traditional neoclassical economics with its preoccupation on equilibrium assuming order, determinacy and *stasis* (Arthur 2013). Sustainability requires a managerial ideology that is adaptive as the critical issues that face management are seldom of "allocative efficiency through markets", but more the issues of formation (Arthur 2013, p. 17). That is "how an economy emerges in the first place and grows and changes structurally over time, involving ideas about innovation, economic development, structural change and the governance of economy" (Arthur 2013, p. 17). All this is a call for sustainable leadership, which is fundamental for the development of humanity, and as such is about morality. The key thesis is that leadership should be concerned with creating value for society in an ethical and sustainable manner whilst making decisions and choices that more often than not conflict between stakeholder groups. Despite the nature of the conflicting demands between stakeholders, the leadership of sustainability is about engagement with stakeholders who pursue contrasting concerns so that some form of reconciliation between these contrasting needs is made possible.

Conclusion

Our research shows that it is the delicate balance between mentoring and monitoring that makes a Board capable of protecting shareholder and broader stakeholder interests through stewarding the management to deliver ever greater value in continually dynamic circumstances. In effect, the need for collaborative governance is overwhelming, but evidence suggests that it is in short supply.

Especially now in mature and saturated markets, the need to adopt a mindset of being contextually sensitive within ever-increasing dynamism is more critical than ever. Regretfully, we can only report that 18% of our sample displays such characteristics and this is down to

the leadership of the enterprise and not local country origin, religion or gender. It is equally regretful to report that governments, public-sector and third-sector entities are rapidly adopting the outdated Anglo-American perspective on strategy and governance. As a consequence, communities are being increasingly disadvantaged due to the incapability of the strategy and governance process to effectively address the ever-changing market and community challenges. As stated, the need for collaborative governance, particularly between the private sector and the state, is high but the desire to pursue such perspective leaves much to be desired. However, if the capitalism as Deleuze (1995, p. 51) says is "an immanent system that's constantly overcoming its own limitations", then this hurdle must be overcome by adapting to sustainable governance based on complexity and collaboration. Thus to solve "super wicked" environmental problems and other social "grand challenges" (Hilbert 1902) identified by the 193 member states of the United Nations at the September 2015 summit, set as 17 goals in order to protect the planet and ensure prosperity for all and support "industry, innovation, and infrastructure" Sustainable Development Goals (SDG) 9, (United Nations, 2015) and "responsible consumption and production" (SDG 12) to mention just a few, requires new models, theories, ideologies and tools. The firm is a social innovation and as such needs to add value to society and solve social problems. Therefore, much of executive management work is leadership, which is political and moral in its nature. That is, leadership is about humanity and in turn about morality.

References

Anderson, M., & Harris, M. (1996). *Economics through the looking glass: "Economic rationalism" as seen by public figures*. IAESR Working Paper Series No. 6/96. Melbourne: Institute of Applied Economic and Social Research, University of Melbourne.

Aristotle. (2002). *Nicomachean ethics* (J. Sachs Trans.). Newburyport: Focus Publishing, R. Pullins Company.

Arthur, W. B. (2013). *Complexity economics: A different framework for economic thought*. SFI Working Paper 2013-04-012. Santa Fe: Institute for the Study of Complexity.

Bauman, Z. (2008). *The art of life*. Cambridge: Polity Press.

Beechler, S. (2014, April 4). When convictions blind leaders. *INSEAD Blog*. http://knowledge.insead.edu/blog/insead-blog/when-convictions-blind-leaders-3320. Accessed October 20, 2016.

Berle, A. A., Jr. (1931). Corporate powers as powers in trust. *Harvard Law Review, 44*(6), 1049–1074.

Berle, A. A., Jr. (1932). For whom corporate managers are trustees: A note. *Harvard Law Review, 45*(8), 1365–1372.

Cadbury, A. (1992). *Report of the committee of the financial aspects of corporate governance*. London: Financial Reporting Council, London Stock Exchange.

Cyret, R., & March, G. (1963). *A behaviour theory of the firm*. New York: Wiley.

Deleuze, G. (1995). Control and becoming. In *Negotiations*, trans. M. Joghin, (pp. 169–176). New York: Columbia University Press.

Dodd, E. M., Jr. (1932). For whom are corporate managers trustees? *Harvard Law Review, 45*(7), 1145–1163.

Financial Reporting Council (FRC). (2012, September). *The UK Stewardship Code*. http://www.frc.org.uk/getattachment/e2db042e-120b-4e4e-bdc7-d540923533a6/UK-Stewardship-Code-September-2012.aspx. Accessed October 5, 2016.

Freeman, R. E., & Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *The Journal of Behavioural Economics, 19*(3), 337–359.

Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning & Education, 4*(1), 75–91.

Ghoshal, S., Bartlett, C. A., & Moran, P. (1999). A new manifesto for management. *Sloan Management Review, 40*(3), 9.

Gourevitch, P. A., & Shinn, J. (2010). *Political power and corporate control: The new global politics of corporate governance*. Princeton: Princeton University Press.

Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of Business Venturing, 25*(5), 439–448.

Hilbert, D. (1902). Mathematical problems. *Bulletin of the American Mathematical Society, 8*(4), 437–479.

Kakabadse, A. (2015). *The success formula: How smart leaders deliver outstanding value*. London: Bloomsbury.

Khurana, R. (2007). *From higher aims to hired hands: The social transformation of American Business schools and the unfulfilled promise of management as a profession*. Princeton: Princeton University Press.

Kletz, P., & Conuel, E. (2017). Sustainable entrepreneurship: Eternal beginnings. In K. Nicolopoulou, M. Karatas-Ozkan, F. Janssen, & J. M. Jermier (Eds.), *Sustainable entrepreneurship and social innovation, Routledge research in sustainability and business* (pp. 13–24). Abingdon: Routledge.

Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. *Journal of World Business, 51*(1), 23–34.

Korten, D. (2010). *Agenda for a new economy: From phantom wealth to real wealth* (2nd ed.). San Francisco: Berrett-Koehler.

McDonagh, T. (2014, 24 April). Allowing corporations to sue governments for changing their laws may be common, but it's not good. *Open Democracy*. https://www.opendemocracy.net/ourkingdom/thomas-mc-donagh/allowing-corporations-to-sue-governments-for-changing-their-laws-may-be. Accessed June 10, 2016.

McLellan, D. S. (1971). The "operational code" approach to the study of political leaders: Dean Anderson's philosophical and instrumental beliefs. *Canadian Journal of Political Science, 4*(1), 52–75.

OECS. (2004). *OECD principles of corporate governance*. Paris: OECD Publications.

Porter, M. (1980). *Competitive strategy: Techniques for analysing industries and competitors*. New York: Free Press.

Rajan, R. G., & Zingales, L. (1998). Power in a theory of the firm. *Quarterly Journal of Economics, 113,* 387–432.

Rindova, V. P. (1999). What corporate boards have to do with strategy: A cognitive perspective. *Journal of Management Studies, 36,* 953–975.

Roach, L. (2011). The UK Stewardship Code. *Journal of Corporate Law Studies, 11*(2), 463–493.

Schumpeter, J. A. (1912/1934). *Theorie der Wirtschaftlichen Entwicklung* [The theory of economic development]. Leipzig: Dunker & Humblot, 1912; translated by Cambridge: Harvard University Press.

Shepherd, D., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with

"what is to be developed". *Entrepreneurship Theory and Practice, 35*(1), 137–163.

Slaper, T. F., & Hall, T. J. (2011). The triple bottom line: What is it and how does it work? *Indian Business Review, 86*(1), 200–211.

Smith, N. C., & Ronnegard, S. (2014, February 3). Shareholder primacy, corporate social responsibility, and the role of business schools, INSEAD Working Paper No. 2014/13/ATL/Social Innovation Centre, SSRN, https://ssrn.com/abstract=2322780.

Stout, L. A. (2012). *The shareholder value myth: How putting shareholders first harms investors, corporations, and the public*. San Francisco: Berrett-Koehler.

Thomson, A. M., & Perry, J. L. (2006). Collaboration process: Inside the black box [Special issue]. *Public Administration Review, 66*(s1): 21–31.

United Nations. (2015). 'Sustainable development goals' in Department of Economic and Social Affairs (Ed.), *Transforming our world: The 2030 agenda for sustainable development*. New York: United Nations. https://sustainabledevelopment.un.org/sdgs. Accessed October 10, 2016.

Vitali, S., Glatfelter, J. B., & Battiston, S. (2011, Septermber 19). The network of global corporate control, Switzerland, Working Paper, arXiv:1107.5728v2 [q-fin.GN], Zurich: Swiss Federal Institute of Technology.

Walker, Sir D. (2009, November 26). *A review of corporate governance in UK Banks and other financial industry entities: Final recommendations*. http://webarchive.nationalarchives.gov.uk/+/http:/www.hmtreasury.gov.uk/d/walker_review_261109.pdf. Accessed October 4, 2016.

Williamson, O. E. (1998). Transaction cost economics: How it works. *De Economist, 146*(1), 23–58.

Zahra, S. A. (1990). Increasing the board's involvement in strategy. *Long Range Planning, 23,* 109–117.

Zahra, S. A., Jennings, D. F., & Kuratko, D. F. (1999). The antecedents and consequences of firm-level entrepreneurship: The state of the field. *Entrepreneurship: Theory & Practice, 24*(2), 45–65.

Entrepreneurship and Ethics: Examples of Social Entrepreneurship in Turkey and Selected Middle-Income Countries

Selva Staub and Zeliha Tekin

Introduction

Profit is the driving purpose of business organisations and accordingly entrepreneurs. However, a concept called social entrepreneurship emerges when seeking profit begins to negatively affect employees, suppliers, customers, related organisations of the organisation, and also society. Social entrepreneurship is a process that utilises innovation in order to combine resources to meet social needs, achieve long-term sustainability, and provide economic and social benefits (Özdevecioğlu and Cingöz 2009, p. 82).

S. Staub (✉)
Applied Science Faculty, Bandirma Onyedi Eylul University, Bandirma, Turkey
e-mail: selvastaub@yahoo.com; selvastaub@bandirma.edu.tr

Z. Tekin
Vocational School of Social Sciences, Mus Alparslan University, Mus, Turkey
e-mail: z.tekin@alparslan.edu.tr

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_6

The concept of *ethics* is derived from ethos (ἦθος), which means custom and habits, and has a 2500-year history as a system of moral standards, values and principles that shall be followed by human beings. The notion of business ethics should be applied in every kind of business through discipline and reflection of ethics principles in business-related activities. Entrepreneurship ethics, as a sub-category of business ethics, is the practice of ethical values on tactics and strategies in decisions and activities related to entrepreneurship. The entrepreneur who achieves individual and social benefits by turning innovations into goods and services shall not aim to gain money by any means, rather they shall make decisions exhibiting ethical behaviours by establishing values and acting in socially responsible ways in an effort to transfer social resources to future generations. Briefly, an entrepreneur becomes a social entrepreneur who finds creative solutions for social problems that exist in such areas as the environment, human rights, poverty, and so on.

'Innovation ecosystem' is the term used to describe the large and diverse array of participants and resources that contribute to and are necessary for ongoing innovation in today's economy. One particular participant in this ecosystem is social entrepreneurial innovation. Societies are focusing on the social sensibilities where morality is an essential concept and organisations are trying to find the equilibrium in the middle-ground of three 'Ps' (people, planet and profit). Organisations perform their social responsibilities in several areas such as society, health and wealth, education, human rights, natural environment, customer rights and interests, and cultural activities (Özgen et al. 2001, p. 69). The concept of ethics as a theoretical reflection of morality (Devine 2000, p. 1) and the social entrepreneurship concept are closely related to each other. The entrepreneur has to take several ethical values into consideration in works they enter into. Profit obtained by accepting bribery, ignoring quality and security, using limited or endangered resources, evading taxes and competing unfairly have no place in entrepreneurship. Profit should be obtained in conformity with ethical rules in entrepreneurship (Akpınar 2009, p. 47). As such, the best approach to an ethical environment comes from the social ecosystem with the ethics upfront. As understood here, each decision taken by an entrepreneur relating to its organisation is actually an ethical option. Options

must consist of actions that fit basic values and principles, and provides the most profitable but least harmful approach for the organisation and its environment. In order to create an ethical social entrepreneurship system, an innovative ecosystem needs to evolve as all parts of the society and institutions (Brickley et al. 2002).

In this chapter, the terms ethics, entrepreneurship and social entrepreneurship are reviewed and explored within an entrepreneurial ecosystem framework. Illustrative examples from business life across Turkey and selected middle-income counties offer a real-world examination of these concepts.

Ethics and Social Entrepreneurship Within the Innovation Ecosystem

Ethics is accepted as a system consisting of moral values (Thomas 2006, p. 222) and is defined as behaviours to be adopted and avoided by parties in several occupational fields relating to morality by the Turkish Language Association (http://www.tdk.gov.tr). Ethics relates to what good behaviour is. The question 'what is good behaviour?' is answered with similar approaches by several theories. For instance, according to a utilitarian approach, something that is moral is something that is good for people as well. Moral actions and judgments constitute subjects of ethics. Ethics means to question the qualitative status of behaviour that makes it a good behaviour in the scope of morality (Çotul 2014, p. 5). Deontology is an approach to ethics that focuses on the rightness or wrongness of actions themselves, as opposed to the rightness or wrongness of the consequences of those actions or to the character and habits of the actor. Therefore, in deontology, as an approach based on the nature of behaviour, evaluation of behaviour in terms of ethics or conformity with moral standards is accepted. Principles such as equality, justice and objectivity make sense in decision-making and implementation (Biçer 2005, p. 14). In summary, ethics is to philosophise or, in other words, to reflect upon morality (Ural 2003, p. 7).

The word 'entrepreneur' in English originates from the French verb entreprendre, meaning to have risk and undertake the job (Landström

2005, p. 8). Entrepreneurship was first defined by Irish Economist Richard Cantillon in the 1730s, who defined it as the person who produces and sells production inputs and services for an undetermined amount of money (Meydan 2013, p. 15). The French economist Jean-Baptiste Say described an entrepreneur as one who "shifts economic resources out of an area of lower and into an area of higher productivity and greater yield." This expands the literal translation from the French, "one who undertakes", to encompass the concept of value creation (Dees and Economy 2001).

Entrepreneurs are businessmen who establish organisations, add new characteristics to current business and create new products, methods, techniques and processes (Mirze 2002, p. 39). Entrepreneurs undertake important missions in the society they are in such as finding solutions for unemployment, developing social wealth and the standard of living, leading development of science and technology, introducing their countries to other countries, avoiding unproductiveness, and finding solutions for social problems such as the environment, human rights and poverty (İraz 2010, p. 158).

As mentioned earlier, to confront social problems in the scope of ethics, namely to be a social entrepreneur, is also among the aims of entrepreneurs. In addition to the primary aim of creating value and making a difference, social entrepreneurship also targets revenue making and obtaining a profit (Harding 2004, p. 43). In other words, social entrepreneurship may be considered as having a social mission, vision and strategy in order to meet social needs and provide innovative solutions and create social value (Güler 2008, p. 76).

Social entrepreneurship consists of two main categories of entrepreneurship according to the definition given by the Canadian Center of Social Entrepreneurship (CCSE). The first category includes activities that lay emphasis on social aspects in the private sector. The second is to encourage more enterprising activities in the voluntary sector in order to provide organisational effectiveness and long-term sustainability (Cook et al. 2003, p. 63).

The concept of social entrepreneurship came to prominence in the 1960s (Okandan and Görgülü 2012, p. 15); however, it was not a new phenomenon. In 1833, William L. Garrison established the American

Anti-Slavery Society, which was also the publisher of the first anti-slavery gazette, and Jane Adams established Hull House to help the poor in 1889. Ashoka is an organisation established by Bill Drayton in 1980 in Washington, DC to provide funds for entrepreneurs to realise positive social transformation and actualise sustainable and applicable innovative projects, and its first member was chosen from India in 1981 (Kayalar and Arslan 2009, p. 58). Social entrepreneurship has recently become a subject of study; it has quickly risen to prominence in private and public non-profit sectors, and has taken its place in the academic literature (Özdevecioğlu and Cingöz 2009, p. 84).

Kırılmaz (2012) carried out a study relating to heads of non-governmental organisations (NGOs) conducting social entrepreneurship in Turkey that are active in the fields of family, environment, children, education, disabled persons, women, health and aids, and focused their research on the success factors of social entrepreneurship relating to entrepreneurial personality and transformational leadership. This study found that the perceptions of social entrepreneurship and transformational leadership held by the NGOs' leaders are at a relatively high level. Additionally, interactions between entrepreneurship, transformational leadership and social entrepreneurship were researched in this study and important relations were found between these three concepts.

In a study analysing factors affecting social entrepreneurship conducted by Güler (2008), it was shown that the behaviour of social entrepreneurs is affected in a positive way by factors such as creative leadership style, creative bellicosity, social environment, self-confidence, a sense of helping dependents, spiritualism, belief in social solidarity, avoidance of uncertainty and a tendency towards individual success, and is affected in a negative way by power range.

Private sector entrepreneurs and social entrepreneurs were compared in terms of cognitive differences in a study carried out by Cools (2008). The results revealed that these two type of entrepreneurs have characteristics that are not so different from each other.

The results of the study conducted by Lepoutre et al. (2011), which included 49 countries, show that countries performing traditional entrepreneurial activities show a greater tendency to perform social

entrepreneurial activities, and social entrepreneurial opportunity cost is higher in developing countries.

The study carried out by Mair and Marti (2006) is one of the most referenced studies relating to social entrepreneurship. They tried to explain sociability in the concept of social entrepreneurship using three successful social entrepreneurship examples. According to Mair and Marti (2006), social value is important. Economic value is also considered necessary to maintain financial assets.

The project 'Social Entrepreneurship and Turkey, Requirements Analysis', which was performed by Ersen et al. (2010) in collaboration with the British Council and TÜSEV (Third Sector Foundation of Turkey), aimed to present a detailed perspective relating to the strong and weak sides of social entrepreneurships in Turkey. The study proposed several activities, including lobbies, awareness raising and capacity developing, as encouraging social entrepreneurships in Turkey; it was emphasised that studies should be dealt with in a multi-directional, multi-stakeholder and long-term way.

Therefore, the question is, what distinguishes social entrepreneurship from its for-profit cousin? First of all, social entrepreneurship is in congruence with entrepreneurship, as they are both grounded in the same three elements: creativity, leadership and innovation.

The difference between these two sets of entrepreneurs can be explained by motivation—with entrepreneurs motivated by money and social entrepreneurs driven by altruism. However, studies prove that entrepreneurs are rarely motivated by financial gain, because they understand the risks related to gaining success (Nicholls and Cho 2006). Both the entrepreneur and the social entrepreneur are motivated by the opportunity they find, pursuing it until the end and seeing the reward from realising their ideas (Martin and Osberg 2007). Regardless of whether they operate within a market or a not-for-profit context, most entrepreneurs are never fully compensated for the time, risk, effort and capital that they pour into their venture (Mair and Marti 2006). Therefore, the critical distinction is the value proposition. For the entrepreneur, marketing a new product or service along with financial gain is the value proposition (Rahdari et al. 2016). However, for the social entrepreneur, the financial gain is not what is in mind. Rather,

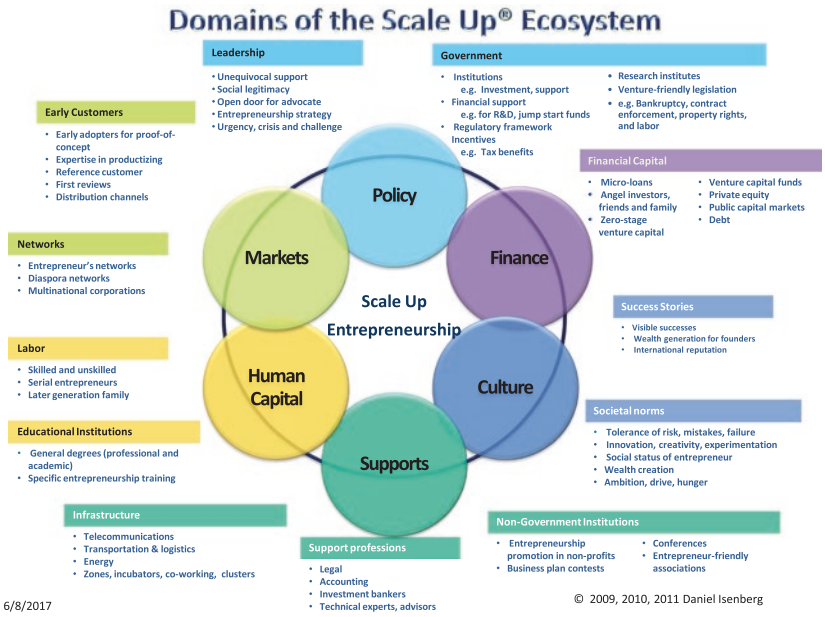

Fig. 1 *Source* Babson College: Isenberg 2011

the financial gain is a tool of the value proposition targeting an underserved, neglected or highly disadvantaged population that lacks the financial means or political clout to achieve the transformative benefit on its own. Ventures created by social entrepreneurs can certainly generate income; what distinguishes social entrepreneurship is the primacy of social benefit (Zeyen et al. 2013).

The entrepreneurship ecosystem consists of many specific elements; however, it is generally accepted that it consists of six general domains (Fig. 1): a conductive culture, enabling policies and leadership, availability of appropriate finance, quality human capital, venture-friendly markets for products, and a range of institutional and infrastructural supports (Isenberg 2011).

All six of these domains are equally important and the common ground between them is the concept of ethics. Ethics is the cultivation of culture; therefore, culture, and specifically positive societal norms and

attitudes towards entrepreneurship, have been recognised as a key component of entrepreneurial ecosystems (Isenberg 2013; Davidsson 1995).

In general, especially in middle-income countries, social entrepreneurial aspirations are not valued because the social status of entrepreneurs is low, their financial success is resented and failure is viewed negatively. For example, in Turkey entrepreneurs (especially social entrepreneurs) do not have a high social status and families prefer their children to seek corporate or government jobs. This suggests that cultural change will require a generation before it alters (Yaribeigi et al. 2014). As one can imagine, this has a cumulative and reinforcing effect of low levels of entrepreneurship in many ecosystems over a longer period of time (Venkataraman 2004). The start of this alteration will be through enterprise education in schools, colleges and universities to promote positive attitudes towards entrepreneurship, and the creation of entrepreneurial campuses (Mason and Brown 2013) to support current and recent students to start businesses.

Bloom and Dees (2008) focused on the cultural acceptance of social entrepreneurship in general. Since then, other studies have added the importance of the availability of role models, educational programmes, a mentorship framework and other factors that might encourage young people to pursue a career in the social sector (Ferraris et al. 2016).

Examples of Social Entrepreneurship in Turkey and Selected Middle-Income Countries

More environmental problems are occurring today and thus the concept of social entrepreneurship is being discussed more than ever. One of the main reasons for this is the recent wave of social activism supported by the brilliant intelligence and motivation of many social entrepreneurs who play major roles in the achievement of massive actions; as well as their passion for vision and mission of their activities (Jackelen 2012, p. 1). Individuals realising social transformation innovatively in fields of education, health, environment, human rights, development initiatives, etc. are being explained (Sobhani and Gasnier 2012: 1). Organisations are forced to make unethical decisions as countries

experience economic recession and crisis, increased populations, fast technology developments, strong competition and ambition for much more profit; consequently, these decisions receive much criticism. These criticisms have brought social entrepreneurship to the fore, as well as highlighting the social responsibilities of organisations. If we have a look at the past of today's global organisations, we might see that there have been ethical dilemmas as well as successful social entrepreneurships including ethical decisions. In this section, we try to give examples of social entrepreneurship including ethical decisions, and not unethical decisions, made by of organisations.

One of the most remarkable examples relating to social entrepreneurship in the scope of organisations is Grameen Bank, a bank operating in Bangladesh and a member of Ashoka, which was established by Prof. Dr. Muhammed Yunus, a Bangladeshi economist. Prof. Dr. Yunus went to a slum village with his students for a field survey when he was teaching at Chittagong University in 1974. While there, they talked to a woman making stools from bamboo and learned that she was paying around 15 pennies for unprocessed bamboo to make each stool and, after paying an intermediary, made a profit of 1 penny. In order to increase their subsistence level, Prof. Yunus sees the opportunity to raise economic livelihoods of the 42 women bamboo waivers by lending money at more advantageous rates from his own pocket. Thus, he started a microcredit application (providing people with business opportunities by granting loans in small amounts). Against recommendations by banks and the government, Yunus continued to grant micro-size loans and established Grameen Bank in 1983—'Grameen Bank' means 'Village Bank'—on the principles of trust and cooperation. In 2006, Yunus and Grameen Bank were deemed worthy of the Nobel Prize for "efforts given to constitute a microcredit system in order to create an economic and social development from the bottom to the top" (www.grameen-info.org/index.php).

Another important microcredit example is the Women's Bank established by Chetna Sinha, an organisation focused on defending women's rights in both a financial sense and relating to rights specific to women and supporting them. Sinha's organisation is also involved in activities relating to the development of education and infrastructure and

performs its activities in drought-affected areas in the West India region. Sinha aims to provide women with land and animals, develop their entrepreneurial skills and increase their income levels, and she provides women with financial literacy programmes as well as setting up markets (Güler 2008, p. 144).

Microcredit has been practiced in both high- and low-income countries including the USA, Pakistan, Indonesia, China and several African countries since the 1980s and it has been established in Turkey since 2002 (Altay 2007, p. 13). However, the poor people living in Turkey are fully involved in this system. The main reasons for this are timid behaviour of women in risk taking, view point of the society toward credits (Güzel 2011, p. 92).

Fazle Abed established The Bangladesh Rural Progress Committee to reduce poverty in 1972. The Committee has been involved in systematic learning in order to meet the needs of the people of the region. The Bangladesh Rural Progress Committee has reached 60,000 out of 86,000 villages in Bangladesh, with particular focus on female villagers' self-help, localised capacity building via economic development, health and education (Alvord et al. 2004, p. 265).

In Mexico in 1966, Plan Puebla, a group of agriculture researchers, provided corn production not only through loans and implementing new technologies but also by supporting small farming cooperatives (Moreno 2004, pp. 16–18). Plan Puebla is considered the first of many Rural Development Plans.

Another example is SEWA (Freelance Working Women's Organization), which was established in 1972 by Ela Bhatt. This organisation provides poor and self-employed women with poverty-reduction assistance via cooperatives and producer groups to help with health, education, insurance, legal and technology issues. SEWA has organised 315,000 self-employed women as free trade union members. This movement also provides micro-financing assistance and consultancy services to women in the production, marketing and sales of handicrafts, and assists in the development of political leadership and organisational learning skills (Alvord et al. 2004, pp. 266–269).

ACCION International, an important organisation in social entrepreneurship that focuses on poverty issues, was founded in Latin

America and continues to work in Africa, Asia and the USA today. ACCION is known as bringing microfinance and individualised education together to enable the poor to self-manage with the aim of facilitating financial access. The organisation demonstrates a high level of social entrepreneurship by its innovative and extraordinary perspective whereby it devotes almost all of its energy to creating social change in an open and persistent manner (Güler 2011, p. 90).

American Victoria Hale's activities in the health field is another example of social entrepreneurship. Hale produces secure, effective and cost-effective drugs with OneWorld Health, the first US non-profit drug company for diseases that have been neglected and affect poor people living in rural areas in developing countries. Hale is conducting research and development studies in order to develop new drugs, especially for diarrhoea in children under 5 years of age, the cause of around 4 million children's deaths every year (http://www.ashoka.org/fellow/3915).

Muhammad Yunus (https://ssir.org/articles/entry/the_legacy_of_muhammad_yunus), founder of Grameen Bank and father of microcredit, provides a classic example of social entrepreneurship. Unable to qualify for loans through the formal banking system, poor Bangladeshis could borrow only by accepting exorbitant interest rates from local moneylenders. Yunus confronted the system by lending the $27 in his own pocket to 42 women from the village of Jobra. The women repaid the entire loan. Yunus found that with even tiny amounts of capital, women invested in their own capacity for generating income. With a sewing machine, for example, women could tailor garments, earning enough to pay back the loan, buy food, educate their children and lift themselves out of poverty. Grameen Bank sustained itself by charging interest on its loans and then recycling the capital to help other women. Yunus brought inspiration, creativity, direct action, courage and fortitude to his venture, proved its viability, and over two decades spawned a global network of other organisations that replicated or adapted his model in other countries and cultures.

There are many other examples of social entrepreneurism, such as: Susan B. Anthony, an American social reformer who fought for women to possess property, struggled for women's rights and led the way to

an amendment of the law relating to these matters; Vinoba Bhave, founder and leader of the Land Donation Movement, provided 3 million decares of land to poor villagers who did not possess land in India; Mary Montessori developed the Montessori approach in early education for children in Italy; Florence Nightingale founded a school of nursing in England and fought to improve conditions in hospitals; American nature lover John Muir established the world national nature parks system and helped establish the Sierra Club; Jean Monnet reconstructed the economy in France after World War II and is considered to have been key in establishing the European Coal and Steel Community, the predecessor of the European Union (http://turkey.ashoka.org/sosyal-giri%C5%9Fimci-kimdir-0).

Prof. Dr. Mustafa Sarı is a member of Ashoka and founder of the Foundation of Nature Observers. He tried to prevent illegal fishing by wandering around Lake Van ten times a year, and has saved the under threat pearly mullet, which only lives in Lake Van, from extinction. Sarı made it to the finals in Schwab foundation for Social Entrepreneur of the Year category in 2008. He was also included for the first time in the Entrepreneur of the Year contest organised by international consultancy company Ernst & Young and Milliyet Gazette in 2009 (www.sabanci-vakfi.org/sayfa/mustafa-sari-2).

wheelmap.org, a website showing places such as cafes, markets, hotels, etc. that are appropriate for disabled people's use, started as a social entrepreneurship project in Germany and gains money from activities such as concerts and tourism-oriented products as an income model. In Turkey, Tülin Akın, who has been nominated for awards by several institutions including Endeavour and Ashoka, and the tarimsal-pazarlama.com website, under the leadership of Akın, are digitsing buy and sell advertisements for those engaged in agriculture at any cost, and provide information relating to agricultural matters and simultaneously follow-up agriculture stock exchange (www.egirisim.com/turkiyeden-sosyal-girisimcilik-ornekleri/).

Tara Hopkins initiated the first Ashoka programme in Turkey as the first country representative. Hopkins, originally from California, USA, worked in Turkey for more than 15 years before she founded çöp(m)adam in 2008, a community project that hires local women in

Western Turkey to produce fashionable handbags from discarded trash in an effort to both reduce waste and provide the women with a reliable income. Each woman is paid a meaningful wage for her work (on a per item basis) and each product is sent to market accompanied by a short note that includes the name of the woman who fabricated it and also describes çöp(m)adam's philosophy. However, social enterprises such as çöp(m)adam commonly face many difficulties, particularly in Turkey where the concept is still very new. Many countries around the world have made legal and tax code provisions for social businesses, but the law in Turkey does not yet recognise social enterprise (i.e. income-generating, non-profit enterprise) as legitimate business (https://www.w4.org/en/voices/empowering-women-reducing-waste-social-business-turkey/).

Şengül Akçar, a founder of the Women's Labor Assessment Foundation (KEDV), initiated efforts to improve women's leadership and entrepreneurial capacities in the fight against poverty in Turkey. First, she developed a new model to promote early childhood care and education services in poor areas. Via the Mother's Leadership programme, which includes family and neighbourhood participation and an alternative educational approach, this movement has helped tens of thousands of women and children benefit from this internationally recognised model. She has developed the idea of women's cooperatives providing an institutional identity to women's social and economic initiatives and being involved in local decisions, by presenting a model of organisation at the local level. Akçar, who provided the foundation of more than 20 women's cooperatives and had the first microcredit application in Turkey, has helped more than 2000 women in the workforce with this project (Kırılmaz 2012, p. 65).

Payda is an NGO in Istanbul, Turkey that was founded in 2009. Payda's mission is derived from the perspective that if the country envisions a modern society, then efforts should be made to increase unity and collaboration among disparate sectors of the society. The means through which Payda is working to achieve their mission is a series of projects—some long-term, some of shorter duration—that have the outcome of strong connections between individuals and organisations through mutual gains. To this end, Payda's objective is to serve as a

facilitator, creating a collective synergy by merging the skills and experiences of multiple individuals and organisations. One example project implemented by Payda is its "With Students" initiative that supports female students in grades 3–11 in the Southeastern region of the country—where the economy is weakest and female students receive the least education. Through this initiative, students are selected based on financial need and a demonstrated commitment to education. While students are provided resource support to ensure that educational goals are met, the linchpin to the project is the student mentor that is there to provide emotional and experiential support—all the way to successful admission to a university. Other examples of Payda projects include scholarships for students in primary, secondary and tertiary education. There is also the "We Connect Schools" project where advanced-level English language learners in Istanbul provide English lessons via online conferencing to disadvantaged students around Turkey. A final example is the "Oya Project" (*oya* means fine embroidery in Turkish), which was created in 2010. Through collaborative partnerships in the business sphere, Payda helps women who make handcrafts move their products from the design and development stages to a final good that can reach a viable market. The aim of the Oya Project is to empower women who have a skill and provide them with an opportunity to generate their own income (http://www.paydaplatformu.org/).

Conclusion

It was 400 BC when Diogenes ironically emphasised that human beings were dishonest by answering "I'm looking for an honest person" when he was asked why he was wandering around with a torch in his hand in daylight, and since then philosophically ethical values such as pansophy, morality and correctness have been under debate and unethical behaviours have been experienced. If people within the community start to be dishonest and unethical behaviours increase, consumers, producers, the community, persons and institutions included in the system might be affected in a negative way. Consumers lose their trust towards institutions, and unfair competition causes entrepreneurs to lose their

determination. Today, concepts such as social responsibility, environmental awareness and customer orientation are being mentioned frequently, yet unethical behaviours are also becoming more common and supported. This is a grave contradiction. In order to dissolve this contradiction, organisations need to develop written rules and codes relating to business ethics and with these efforts organisational activity results should be evaluated within the scope of these codes.

In addition to this, management should demonstrate ethical behaviours as a model for employees. Management or employers should appreciate and reward their employees for their ethical behaviours, and in the contrary case should impose a reprimand or required punishment. In order to adapt a philosophy of ethics in organisations, organisations should actualise their internal audit mechanism with ethical audit mechanisms and find creative solutions for social problems such as the environment, human rights, poverty, etc. In summary, organisations should perform and support social entrepreneurship activities as well as activities providing profit. With an increase in the number of social entrepreneurship activities, social wealth, development and transformation will be achieved, and solidarity and cooperation will gain strength. Additionally, social entrepreneurship is key to providing equal opportunities and solving social problems with new approaches.

A social entrepreneurship landscape can best be characterised as one of growing activity, yet which is confined to only a select group of institutions with little private sector support and a severe lack of assistance from the media and public sector in under-developed countries. This also applies to Turkey. However, this field is still maturing and now, at this crucial point, there must be a concerted effort to better understand and localise the concept and fit it to Turkey's development needs.

In recent years social entrepreneurship activities have risen notably in Turkey. Institutions such as Ashoka and Synergos have established a physical presence. Some local social entrepreneurs are themselves gaining more prominence throughout the country, accompanied by events, competitions, and an emphasis on sustainable businesses and around social innovation.

However, the concept and practice of social entrepreneurship is still confined to a select few and faces problems regarding effectiveness and

strategy throughout Turkey. Support from private investment is still minimal and support from the media and public sector is virtually non-existent. The buy-in from these players is critical for developing a robust and dynamic ecosystem.

Moving forward, incorporating more stakeholders and leveraging resources to create meaningful impact must become top priorities. There is a growing number of social entrepreneurs being influenced by the global concept of social innovations, and they are establishing certain models and school of thoughts in Turkey. This now needs to be defined and nurtured by the local community. Youth will play an important role in this process, and must be given the opportunity to learn first-hand the value and practices of social entrepreneurship. Integrating younger generations into this field will contribute to its sustainability by creating an idea and talent pipeline for the future.

Sustainable and strategic growth of social entrepreneurship in Turkey relies on the ability to work together and come to a consensus on the needs of local players. Closer collaboration with the government, private sector and media and integrating social enterprises into existing value-chains will be critical. The private sector can play a role in providing technical support to existing social enterprises, in helping them build sustainable business models and even experiment with hybrid social businesses. In terms of public sector involvement, social entrepreneurship can only be realised if it is incorporated into a national development strategy. Effective communication with stakeholders throughout this process cannot be underestimated. Current social enterprises and other players in the ecosystem must take steps to educate the media and help them better understand the social innovation space, its challenges and opportunities. This approach must also be applied to the donor community to communicate their value-proposition. The private sector too could interact with social entrepreneurs on a similar level, which could provide a foundation for helping social enterprises evolve towards more sustainable operations—an interaction that rests on communication and collaboration rather than just funding.

The key factors are collaboration and communication at all levels and with stakeholders around Turkey without self-interest and personal motivation being a factor.

References

Akpınar, S. (2009). *Girişimciliğin Temel Bilgileri*. Kocaeli: Umuttepe Yayınları.

Altay, A. (2007). The challenge for global women poverty: Microfinance (or microcredit) as a solution for women poverty in Turkey. In *International conference on globalization and discontents*, Cortland.

Alvord, S. H., Brown, L. D., & Letts, C. W. (2004). Social entrepreneurship and societal transformation. *The Journal of Applied Behavioral Science, 40*(3), 260–282.

Biçer, M. (2005). *Satış Elemanlarının İş Tatmini, Örgüt Bağlılığı ve İşten Ayrılma Niyetinin Etik İklim ile İlişkisi: Sigorta ve İlaç Sektörlerinde Bir Araştırma*. Adana: Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi.

Bloom, P. N., & Dees, G. (2008). Cultivate your ecosystem. *Stanford Social Innovation Review, 6*(1), 47–53.

Brickley, J. A., Smith, C. W., Jr., & Zimmerman, J. L. (2002). Business ethics and organizational architecture. *Journal of Banking & Finance, 26*(9), 1821–1835.

Cook, B., Dodds, C., & Mitchell, W. (2003). Social entrepreneurship- false premises and dangerous forebodings. *Australian Journal of Social Issues, 38*(1), 57–72.

Cools, E. (2008). What's in a name? An inquiry on the cognitive and entrepreneurial profile of the social entrepreneur. Vlerick Leuven Gent Management School, Working Paper Series 2008/02.

Çotul, A. (2014). İşletme Etiğinde Sinizm ve İşgören Performansı Arasındaki İlişki: İstanbul'da Tekstil İşletmelerinde Çalışanlara Yönelik Bir Uygulama. *Beykent Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi.*

Davidsson, P. (1995). Culture, structure and regional levels of entrepreneurship. *Entrepreneurship and Regional Development, 7*(1), 41–62.

Dees, J. G., & Economy, P. (2001). Social entrepreneurship. In J. G. Dees, J. Emerson, & P. Economy (Eds.), *Enterprising nonprofits: A toolkit for social entrepreneurs*. New York: John Wiley.

Devine, P. E. (2000). *Naturel law ethics*. London: Greenwood.

Ersen, T. B., Kaya, D., & Meydanoğlu, Z. (2010). *Sosyal Girişimler ve Türkiye İhtiyaç Analizi Raporu*. İstanbul: TÜSEV Yayınları.

Ferraris, A., Leucci, S., Bresciani, S., & Giunchiglia, F. (2016). An innovation ecosystem beyond the triple helix model. In L. Carvalho (Ed.), *Handbook of*

research on entrepreneurial success and its impact on regional development (pp. 631–648). IGI Global: Pennsylvania.

Güler, B.K. (2008). Sosyal Girişimciliği Etkileyen Faktörlerin Analizi. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Doktora Tezi.*

Güler, B. K. (2011). Yoksullukla Mücadelede Sosyal Girişimcilik: Üyelerinden Sosyal Yenilikçi Örnek Uygulamalar. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 13*(3), 79–111.

Güzel, S. (2011). *Kadın Yoksulluğu ile Mücadelede Dünya Bankası ve Mikro Kredi Uygulaması: Türkiye Açısından Bir Değerlendirme* (pp. 79–96). Cinsiyet Ekonomisi: Azerbaycan'ın Vergi Haberleri.

Harding, R. (2004). Social enterprise: The new economic engine. *Business Strategy Review, 15,* 39–43.

İraz, R. (2010). *Girişimcilik ve Kobiler*. Konya: Çizgi Kitabevi Yayınları.

Isenberg, D. (2011). *The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship*. Babson College: Babson Entrepreneurship Ecosystem Project.

Isenberg, D. (2013). *Worthless, impossible and stupid: How contrarian entrepreneurs create and capture extraordinary value*. Cambridge: Harvard Business Review Press.

Jackelen, H. (2012). *Büyüyen Kapsayıcı Piyasalar Türkiye'de Sosyal Girişimcilik Vakaları*. İstanbul: Bilgi Üniversitesi Yayınları.

Jean-Baptiste Say, quoted in Dees, J. G., "The Meaning of 'Social Entrepreneurship'", reformatted and revised, 30 May 2001.

Kayalar, M., & Arslan, E. T. (2009). Ashoka'ya Üye Sosyal Girişimcilerin Türkiye ve Dünyadaki Faaliyet Alanlarının Karşılaştırılması. *Süleyman Demirel Üniversitesi Vizyoner Dergisi, 1*(1), 56–76.

Kırılmaz, S. (2012). Sosyal Girişimciliğin Başarı Faktörlerinin Girişimci Kişilik ve Dönüştürücü Liderlik Bağlamında Araştırılması. *Çanakkale On Sekiz Mart Üniversitesi Sosyal Bilimler Enstitüsü Doktora Tezi.*

Landström, H. (2005). *Pioneers in entrepreneurship and small business research*. New York: Springer.

Lepoutre, J., Justo, R., Terjesen, S., & Bosma, N. (2011) Designing a global standardized methodology for measuring social entrepreneurship activity: The global entrepreneurship monitor social entrepreneurship study, *Small Business Economics*, forthcoming, Working Paper Series nr: 11–07.

Mair, J., & Marti, I. (2006). Social Entrepreneurship research: A source of explanation, prediction, and delight. *Journal of World Business, 41,* 36–44.

Martin, R. L., & Osberg, S. (2007). Social entrepreneurship: The case for definition. *Stanford Social Innovation Review, 5*(2), 28–39.

Mason, C., & Brown, R. (2013). Creating good public policy to support high growth firms. *Small Business Economics, 40,* 211–225.

Meydan, M. C. (2013). Girişimciliğin Ölçülmesi: Türkiye İçin Bölgesel Girişimcilik Endeksi Önerisi. *Gazi Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi.*

Mirze, S. K. (2002). *Introduction to business*. Istanbul: Literatür Publishing.

Moreno, N. C. (2004). Agricultural technology transfer experiences in Mexico: Lessons and options. UNU-IAS Working Paper no. 107.

Nicholls, A., & Cho, A. H. (2006). Social entrepreneurship: the structuration of a field. In *Social entrepreneurship: New models of sustainable social change* (pp. 99–118).

Okandan, G. D., & Görgülü, V. (2012). *Türkiye'de Sosyal Girişimcilik Tanımları ve Örnekleri, Büyüyen Kapsayıcı Piyasalar Türkiye'de Sosyal Girişimcilik Vakaları*. İstanbul: Bilgi Üniversitesi Yayınları.

Özdevecioğlu, M., & Cingöz, A. (2009). Sosyal Girişimcilik ve Sosyal Girişimciler: Teorik Çerçeve. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 32,* 81–95.

Özgen, H., Öztürk, A., & Yalçın, A. (2001). *Temel İşletmecilik Bilgisi*. Adana: Nobel.

Sobhani, S., & Gasnier, A. (2012). *Büyüyen Kapsayıcı Piyasalar Türkiye'de Sosyal Girişimcilik Vakaları*. İstanbul: Bilgi Üniversitesi Yayınları.

Rahdari, A., Sepasi, S., & Mohammad Moradi, M. (2016). Achieving sustainability through Schumpeterian social entrepreneurship: The role of social enterprises. *Journal of Cleaner Production, 137,* 347–360.

Thomas, C. B., Jr. (2006). Some observations on the social psychological study of human values. In D. A. Hantula (Ed.), *Advances in social and organizational psychology: A tribute to Ralph Rosnow*. Mahwah: Lawrence Erlbaum Associates.

Ural, T. (2003). *İşletme ve Pazarlama Etiği*. Ankara: Detay Yayınları.

Venkataraman, S. (2004). Regional through technological. *Journal of Business Venturing, 19*(1), 153–167.

Yaribeigi, E., Hosseini, S. J., Lashgarara, F., Mirdamadi, S. M., & Najafabadi, M. O. (2014). Development of entrepreneurship ecosystem. *International Journal of Advanced Biology Biomedical Research, 2*(12), 2905–2908.

Zeyen, A., Beckmann, M., Mueller, S., Dees, J. G., Khanin, D., Krueger, N., et al. (2013). Social and broader theories: Shedding new light on the 'bigger picture'. *Journal of Social Entrepreneurship, 4*(1), 88–107.

turkey.ashoka.org/sosyal-girişimci-kimdir.

www.grameen-info.org/index.php.
www.sabancivakfi.org/sayfa/mustafa-sari-2.
www.egirisim.com/turkiyeden-sosyal-girisimcilik-ornekleri/-business-turkey/.
www.egirisim.com/turkiyeden-sosyal-girisimcilik-ornekleri/.
https://www.w4.org/en/voices/empowering-women-reducing-waste-social-business-turkey/.
http://www.paydaplatformu.org/.

An Empirical Analysis of the Macroeconomic Dynamics of Innovation

Cigdem Borke Tunali

Introduction

Since the beginning of the second half of the twentieth century, it has been generally accepted that innovation plays a key role in economic growth and development, both in developed and developing countries. As a result of this, determining the factors that affect the innovation performance of firms has become a significant issue in recent years.

Although there are quite a few studies that examine how technological development and innovation affect economic growth and the rate of development of countries, the number of studies analysing the relationship between macroeconomic factors and the innovation performance of firms is very low. Hence, the aim of this chapter is to investigate the influence of macroeconomic indicators on the firms' innovation performance in the middle-income European countries that are

C.B. Tunali (✉)
Department of Economics, Faculty of Economics,
Istanbul University, Istanbul, Turkey
e-mail: cbtunali@istanbul.edu.tr

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_7

either members or formal/potential candidates for membership of the European Union (EU).

In the empirical analysis, the real gross domestic product (GDP) growth rate, unemployment rate, deposit interest rate, domestic credit to the private sector and final consumption expenditure are used as macroeconomic factors. Moreover, firm-level characteristics such as spending on research and development (R&D) activities and firm size are added to the models. Since the middle-income countries are examined in the analysis, both introducing new products and services and upgrading an existing product line or service is employed as the dependent variables of the models. This is because middle-income countries are more likely to upgrade their existing product lines or services instead of introducing new products or services than are high-income countries. The results of the empirical analysis indicate that most of the macroeconomic factors under investigation affect the innovation performance of the firms. Hence, policy-makers should take into account macroeconomic factors while designing economic policies that aim to enhance the innovation performance of firms in the middle-income European countries.

In this chapter we first explain the theoretical background and literature review with a focus on the determinants of innovation activities of firms. Next, the data and methodology of the empirical analysis is discussed. After that, the results of the empirical analysis is presented and, finally, the last section concludes.

Theoretical Background and Literature Review

Since the beginning of 1900s, the determinants of innovation have been theoretically and empirically investigated in the literature and various factors such as microeconomic features and macroeconomic performance have been identified as the drivers of innovation (Avermaete et al. 2003).

Theoretical analyses of the determinants of innovation are mainly based on the studies of Schumpeter (1934, 1942). In the *Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest*

and the Business Cycle, Schumpeter (1934) explains that new firms that develop new products and processes can enter into markets easily and this leads to the disruption of existing production methods and the depletion of excess profits. Schumpeter (1934) defines this process as "Creative Destruction" and points out the role of new firms in the innovation process.

In *Capitalism, Socialism and Democracy*, Schumpeter (1942) emphasises the relationship between firm size and innovation and argues that large firms are in a better position than small firms with regard to innovation activities since they have the necessary sources (large-scale production, knowledge stock, access to external financial resources, etc.) to conduct innovation and technological development. However, Arrow (1962) asserts that the likelihood to innovate is higher for competitive firms than for monopolists. The reasons why small firms are more likely to be innovative than large firms are that small firms can make decisions with regard to innovation projects more quickly than large firms, they have less bureaucratic process, have a more flexible structure and adapt more easily to change than large firms (Dean et al. 1998; Chandy and Tellis 2000; Damanpour 2010).

In the existing literature, there are many empirical studies that examine the relationship between the size and the innovation performance of firms. However, in line with the theoretical explanations, the results of these studies are inconclusive and the debate about this issue still continues (Avermaete et al. 2003)[1].

One of the earlier empirical analyses that focuses on the effect of firm size on innovation is that by Acs and Audretsch (1987) who examine the influence of firm size and the structure of markets on the innovation performance of the firms by taking into account the different characteristics of large and small firms in different industries. In the empirical analysis, the authors use a comprehensive dataset that covers 172 innovative and 42 highly innovative industries and find that whilst large firms are more innovative in markets where imperfect competition prevails, small firms are more innovative in markets that have the characteristics of a competitive model (Acs and Audretsch 1987). Archibugi et al. (1995) investigated the relationship between concentration, firm size and innovation performance by drawing on a dataset comprised

of 6839 Italian firms. According to the empirical results, Archibugi et al. (1995) suggest that there is a positive relation between firm size and innovation performance both in highly innovative industries and at the aggregate level. Cohen and Klepper (1996) assess how the size of firms determines the amount of process and product innovations by putting forward a theory and testing it empirically. The authors use patent data developed by Scherer and business unit sales data from the Federal Trade Commission's Line of Business Program and find that larger firms are more likely to innovate than smaller firms (Cohen and Klepper 1996). Similar to the study by Acs and Audretsch (1987), Van Dijk et al. (1997) analysed the effect of different market structures on the innovation performance of large and small firms in the Netherlands using a different innovation measure at a different aggregation level. According to the empirical results, Van Dijk et al. (1997) argue that concentration does not have a different effect on the innovation performance of large firms in comparison with small firms.

Rogers (2004) examined the determinants of innovation in Australia by drawing on a dataset obtained from the Australian Bureau of Statistics Growth and Performance Survey. In the empirical analysis, Rogers (2004) estimated a Probit model for manufacturing and non-manufacturing firms separately and found that the determinants of innovation changes together with the firm size. By taking into account these results, Rogers (2004) asserts that market share and industry concentration have very little effect on the innovation performance of the firms. Bhattacharya and Bloch (2004) assessed the influence of firm size, market structure, profitability and growth on the innovation performance of small- and medium-sized Australian manufacturing enterprises. By drawing on a dataset obtained from the Business Longitudinal Survey of the Australian Bureau of Statistics in the empirical analysis, the authors argue that size, R&D intensity, market structure and trade shares have a positive effect on the innovation performance of both the full sample and high-tech firms (Bhattacharya and Bloch 2004). Wagner and Hansen (2005) investigated the effect of firm size on innovation performance in the wood products industry. The authors used a dataset attained from 43 interviews with top managers of firms in the wood products industry in the US and Chile (Wagner

and Hansen 2005). According to the results of the empirical analysis, Wagner and Hansen (2005) suggest that firm size has an effect on the type of the innovation of companies in this industry. Hong et al. (2016) analysed the drivers of innovation in New Zealand using four iterations (2005, 2007, 2009, 2011) of the Business Operations Survey, which includes over 22,000 observations. The authors estimated a multivariate Probit regression model and came to the conclusion that factors such as R&D capability, major technology change, application to formal intellectual property protection, accessing new export markets and firm size have positive influences on the innovation performance of firms (Hong et al. 2016).

As clearly seen from these explanations, the results of existing empirical studies examining the relationship between firm size and innovation performance are mixed and this issue is yet to be resolved.

Besides firm size and market structure, the issue of the effect of macroeconomic factors on the innovation performance of firms has re-emerged in recent years, especially after the 2008 global economic crisis (Thompson and Stam 2010). In the literature, economists put forward 'supply–push' and 'demand–pull' models of innovation to explain the relationship between macroeconomic activity and innovation performance of firms (Geroski and Walters 1995). According to the supply–push model[2], basic research is the starting point of innovation and the source of applied research that leads to new production and its diffusion (Godin 2006). The supply–push model asserts that the main reason for fluctuations in economic activity is fluctuations of innovation activities of the firms (Geroski and Walters 1995). On the other hand, the demand–pull model, proposed by Schmookler (1966), argues that innovative activities of the firms are determined by the sales in the relevant class of products (Crespi 2004).

In recent years, academics and policy-makers have generally accepted that both supply–push factors such as science and technology and demand–pull factors such as sales or profitability (Geroski and Walters 1995) mutually determine the innovation performance of firms (Di Stefano et al. 2012). However, there are very few empirical studies in the existing literature that examine the effects of different macroeconomic dynamics on innovation (Thompson and Stam 2010).

Sun and Du (2010) analysed the determinants of innovation in Chinese industries by drawing on 2004 census data. Unlike most of the other studies in the literature, Sun and Du (2010) used industry-level explanatory variables such as the number of patents, percentage of new products and R&D spending out of gross output of the sectors, spending on licensing for foreign and domestic technologies, spending on technology upgrading and renovation, percentage of exports out of gross sales of the sectors, and percentage of foreign-invested companies out of total assets of the sectors. According to the results of the empirical analysis, Sun and Du (2010) conclude that R&D spending is the most significant factor of innovation activities at the sectoral level. Khan and Roy (2011) examined the determinants of innovation performance in BRICS (Brazil, Russia, India, China and South Africa) and OECD (Organisation for Economic Co-operation and Development) countries by taking into account macroeconomic, fiscal and social factors. The explanatory variables used in the empirical analysis are the percentage of people with internet access, per capita consumption of electricity, openness (defined as the ratio of foreign trade to GDP) and diversity (defined as the ratio of percentage sum of all other minorities to the percentage of the largest ethnic group in the country) (Khan and Roy 2011). The empirical results of this study indicate that while progressing generation and distribution of electricity consumption, investment in higher education and trade liberalisation have a positive effect on the innovation performance of emerging countries, increasing R&D expenditures is more efficient with regard to innovation activities in OECD countries than in BRICS countries (Khan and Roy 2011). Thompson and Stam (2010) investigated the effects of macroeconomic factors (real GDP growth, consumption rates, long-term interest rates and unemployment rates) on the innovation performance in the Netherlands by employing a comprehensive dataset comprised of a random sample of surveys conducted between 1999 and 2009. In the empirical analysis, the authors used a number of control variables such as firm size, inter-firm cooperation in a renewal project and having employees who work on renewal projects together with macroeconomic variables and found that whilst real GDP growth and the unemployment rate have

a positive effect on innovation, the interest rate has a negative effect on the innovation performance of the firms (Thompson and Stam 2010).

As stated earlier, empirical analyses that focus on the influence of macroeconomic factors on the innovation performance of firms are scarce. Hence, this chapter tries to fill in this gap in the existing literature by investigating the influence of a number of macroeconomic indicators on the innovation performance of firms in the middle-income European countries.

Data and Methodology

Similar to the analysis by Thompson and Stam (2010), in this study the effects of macroeconomic factors on the innovation performance of firms are investigated empirically. The countries under investigation are the middle-income European countries that are either member or formal/potential candidates for membership of the EU. These countries are Albania, Bosnia and Herzegovina, Bulgaria, the Former Yugoslav Republic of Macedonia, Montenegro, Romania and Serbia. The World Bank's classification is taken into account in order to determine middle-income European countries (World Bank 2016a). According to this classification, Kosova and Turkey are among the middle-income countries that are also either a member or formal/potential candidates of the EU. However, these two countries do not have data for the year 2005. Because of this, Turkey and Kosovo are not included in the dataset.

The empirical analysis uses individual firm-level survey data obtained from the World Bank Enterprise Survey (World Bank 2016b), which consists of information compiled from individual firms about the business environment of countries, how this environment affects the firms, and various factors that limit the performance of the firms and their growth. Furthermore, the survey has a number of questions about the innovation performance of the firms (World Bank 2016b). The first question that is employed as the dependent variable in this empirical analysis asks whether the firm introduced any new products or services in the last 3 years (World Bank 2016b). The answer to this question takes the value of 1 if the respondent firm produced new products

or services and 0 otherwise (World Bank 2016b). Since the countries under investigation are middle-income European countries, introducing new products and services is more difficult than improving existing products and services for this group in comparison with high-income European countries. Because of this, another question that asks whether the firm upgraded an existing product line or services in the last 3 years is also used as the dependent variable in the estimations (World Bank 2016b). Similar to the previous question, the answer to this question takes the value of 1 if the respondent firm upgraded its products and services and 0 otherwise (World Bank 2016b).

As stated earlier, this empirical analysis is similar to the analysis by Thompson and Stam (2010) and mainly examines the influence of macroeconomic factors on the innovation performance of the firms. So, the key independent variables are real GDP growth rate, unemployment rate as a percentage of total labour force, deposit interest rate, domestic credit to private sector as a percentage of GDP and final consumption expenditure as a percentage of GDP. These data are obtained from the World Bank World Development Indicators database (World Bank 2016c). Since 2005 and 2009 Enterprise Surveys are used in the empirical analysis and the questions ask about the last three years three year averages (2002, 2003 and 2004 for the year 2005 and 2006, 2007 and 2008 for the year 2009) of the macroeconomic variables are taken into account in the empirical analysis. Together with macroeconomic factors, a number of firm-level control variables are also employed in the empirical analysis. These variables are whether the firm spent on R&D activities either in-house or contracted with other companies (outsourced) and firm size (World Bank 2016b). The first control variable takes the value of 1 if the respondent firm spent on R&D activities and 0 otherwise (World Bank 2016b). The second control variable takes the value of 1 if the firm is small (between 5 and 19 employees), 2 if the firm is medium (between 20 and 99 employees) and 3 if the firm is large (more than 100 employees) (World Bank 2016b). The models estimated are stated as follows:

$$\begin{aligned} innovation_{ckt} = {} & \alpha_{1t} randd_{ckt} + \alpha_{2t} firmsize_{ckt} \\ & + \alpha_{3t} macroeconomy_{kt} + \alpha_{4t} \mu_k + \varepsilon_{ckt} \end{aligned} \tag{1}$$

$$upgrade_{ckt} = \alpha_{1t} randd_{ckt} + \alpha_{2t} firmsize_{ckt} + \alpha_{3t} macroeconomy_{kt} + \alpha_{4t}\mu_k + \varepsilon_{ckt} \quad (2)$$

In Eq. 1, *innovation* represents whether the firm introduced any new products or services in the last 3 years. Similarly, in Eq. 2 *upgrade* indicates whether the firm upgraded an existing product line or services in the last 3 years. In both of the equations *randd* represents whether the firm spent on R&D activities, *firmsize* shows how big the firm is (small, medium, large), *macroeconomy* indicates the macroeconomic variables (real GDP growth rate, unemployment rate, deposit interest rate, domestic credit to private sector and final consumption expenditure), μ_k is the country dummy and ε_{ckt} is the error term. The subscripts c, k and t indicate firms, countries and time, respectively. These equations are estimated for every macroeconomic variable separately. The firms that participated in the survey are not the same for 2005 and 2009 (World Bank 2016b) and, hence, panel estimation techniques are not used. Since the dependent variables are categorical and take the value of 1 or 0, a logistic regression model is employed in order to estimate the equations.

Results

Table 1 shows the results of regressions in which innovation (whether the firm introduced any new products or services in the last 3 years) is used as the dependent variable. Since the model is estimated for every macroeconomic variable separately, each column in the table presents the results of a regression that is estimated using one of the macroeconomic variables as the key independent variable.

When the coefficient estimates of control variables in Table 1 are examined, it is found that spending money on R&D activities increases the probability of introducing new products or services by the firms. Moreover, firm size is a significant determinant of a firm's innovation performance and being a medium-sized firm (firm size (2)) has a positive effect on the probability of engaging innovation activities.

Table 1 Estimation results (dependent variable: innovation)

	(1)	(2)	(3)	(4)	(5)
R&D expenditure	0.39597***	0.399926***	0.398137***	0.388385***	0.394962***
	(0.0237)	(0.0237)	(0.0237)	(0.0239)	(0.0238)
Firm size (2)	0.116169***	0.118967***	0.116887***	0.11313***	0.115774***
	(0.0222)	(0.0221)	(0.0222)	(0.0223)	(0.0222)
Firm size (3)	0.028631	0.03334	0.023182	0.024338	0.030024
	(0.0262)	(0.0262)	(0.0263)	(0.0262)	(0.0262)
Real GDP growth	0.029848**				
	(0.0138)				
Unemployment		0.002156			
		(0.0064)			
Interest rate			−0.01842***		
			(0.0051)		
Domestic credit				0.004028***	
				(0.0011)	
Consumption expenditure					−0.00524*
					(0.0027)
Country dummy	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1111	0.1100	0.1131	0.1133	0.1109
Observations	3084	3084	3084		3084

Source Author's estimations

The coefficient estimates are marginal effects. Standard errors are in parentheses

GDP and *R&D* represent gross domestic product and research and development respectively, $*p \leq 0.10$, $**p \leq 0.05$, $***p \leq 0.01$

According to the coefficient estimates of the macroeconomic variables, real GDP growth rate, deposit interest rate, domestic credit to private sector and final consumption expenditure are statistically significant determinants of innovation performance of the firms. However, unemployment rate does not have a statistically significant effect on innovation activities. When the sign and the magnitude of these variables are investigated, it is found that GDP growth rate has a positive influence on innovation and a 1% increase of the GDP growth rate leads to a 0.03% increase in the probability of introducing new products or services (column 1). In contrast to the effect of GDP growth rate, deposit interest rate negatively influences the innovation performance of the firms (column 3). The coefficient estimate of this variable indicates that a 1% increase of deposit interest rate results in 0.02% decrease in the probability of introducing new products and services.

With regard to domestic credit to private sector, the results show that this variable has a positive effect on the innovation performance of the firms (column 4). According to the coefficient estimate, a 1% rise in the domestic credit to private sector increases the probability of introducing new products and services by 0.004%. Finally, the results of regression, which is estimated using final consumption expenditure as the key macroeconomic variable, demonstrate that consumption expenditure negatively affects the innovation performance of the firms (column 5). The coefficient estimate of this variable indicates that a 1% increase of final consumption expenditure leads to a 0.005% decrease in the probability of introducing new products or services by the firms.

As explained in Section "Data and Methodology", since the countries under investigation are middle-income European countries, it is more likely that this group of countries will upgrade existing products or services instead of introducing new products and services. Hence, in order to better understand the effect of macroeconomic factors on the innovation performance of the firms, the model is estimated once again using a dependent variable that represents whether the firm upgraded an existing product line or service in the last 3 years. Table 2 shows the results of these regressions.

Similar to the previous results, the control variables are statistically significant determinants of the innovation performance of firms.

Table 2 Estimation results (dependent variable: upgrade)

	(1)	(2)	(3)	(4)	(5)
R&D expenditure	0.361609***	0.363509***	0.367744***	0.3589***	0.362125***
	(0.0246)	(0.0246)	(0.0245)	(0.0247)	(0.0246)
Firm size (2)	0.110956***	0.112975***	0.115518***	0.110537***	0.111212***
	(0.0205)	(0.0205)	(0.0204)	(0.0205)	(0.0205)
Firm size (3)	0.044119	0.048313*	0.054961**	0.043705*	0.046938*
	(0.0256)	(0.0255)	(0.0256)	(0.0257)	(0.0255)
Real GDP growth	0.03543***				
	(0.0127)				
Unemployment		–0.01616***			
		(0.0059)			
Interest rate			0.005742		
			(0.0045)		
Domestic credit				0.002484***	
				(0.0010)	
Consumption expenditure					–0.00528**
					(0.0025)
Country dummy	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1231	0.1231	0.1216	0.1228	0.1223
Observations	3073	3073	3073	3073	3073

Source Author's estimations

The coefficient estimates are marginal effects. Standard errors are in parentheses

GDP and *R&D* represent gross domestic product and research and development respectively, $*p \leq 0.10$, $**p \leq 0.05$, $***p \leq 0.01$

Moreover, the coefficient estimates of these variables indicate that spending money on R&D activities and being a medium-sized firm has a positive effect on upgrading an existing product line or service. Here, being a large firm also has a positive influence on the innovation performance of firms (columns 2, 3 and 4). However, according to the results of regressions in which unemployment rate and domestic credit to private sector are used as the key independent variables, being a large firm is statistically significant only at the 10% level. Thus, these results do not provide robust evidence in relation to the effect of being a large firm on the upgrading activities of firms.

When the regression results with regard to macroeconomic variables are investigated, it is found that real GDP growth rate, unemployment rate, domestic credit to private sector and final consumption expenditure have statistically significant effects on the upgrading activities of the firms. According to the coefficient estimates, while a 1% increase in the GDP growth rate leads to a 0.04% increase in the probability of upgrading an existing product line or service a 1% increase in the unemployment rate decreases the probability of upgrading activities of firms by 0.02%. The coefficient estimates of domestic credit to private sector and final consumption expenditure are similar to the previous results. A 1% rise in the domestic credit to private sector results in a 0.02% increase in the upgrading activities of the firms. Finally, a 1% increase of final consumption expenditure decreases the probability of upgrading an existing product line or service by 0.005%.

In summary, according to these results, it is argued that real GDP growth rate, domestic credit to private sector and final consumption expenditure affect both the introduction of new products and services and upgrading an existing product line or service. However, deposit interest rate (introducing new products and services) and unemployment rate (upgrading an existing product line or service) influence only one of the innovation activities of firms. When the coefficient estimates of these variables are investigated it is found that real GDP growth rate and domestic credit to private sector have a positive effect on the innovation performance of the firms. This result is as expected since economic expansion and increasing financial resources facilitate firms' innovation activities. However, final consumption expenditure has a negative

influence on the innovation performance of firms. This may stem from the fact that most of the consumers prefer existing products instead of new ones. Finally, deposit interest rate and unemployment rate negatively affect the innovation activities of firms. This result is conceivable since rising interest rates increase the cost of financial resources. Under these conditions, firms have difficulties finding necessary resources in order to conduct innovation activities. Similarly, rising unemployment rates generally indicate economic contraction, which makes the innovation activities of firms more difficult. Hence, when the coefficient estimates of real GDP growth rate and unemployment rate are taken into account together, it is suggested that the innovation performance of the firms in middle-income European countries is pro-cyclical.

Conclusion

Technological development and innovation activities are widely accepted as some of the fundamental determinants of economic growth and development in recent years. Hence, establishing the effects of these activities on the economic performance of countries and determining the factors that influence innovation activities have become hotly debated issues both in developed and developing countries.

Although the number of studies that empirically investigate the effect of technological development and innovation activities on the economic growth and development rates of countries and the relationship between firm-level characteristics and the innovation performance of firms is quite high, the number of empirical analyses that examine the influence of macroeconomic factors on the firms' innovation activities is very low. This study tries to fill in this gap in the existing literature by providing new empirical evidence with regard to the relationship between macroeconomic factors and the innovation performance of firms.

In the empirical analysis, the effect of macroeconomic factors on the innovation activities of firms is investigated by using firm-level data for the middle-income European countries that are either members or formal/potential candidates for membership of the EU. The macroeconomic factors that are taken into account in the empirical analysis are

real GDP growth rate, unemployment rate, deposit interest rate, domestic credit to private sector and final consumption expenditure. In addition to these macroeconomic indicators, a number of control variables such as spending on R&D activities and firm size are also used in the empirical analysis. Since the countries under investigation are middle-income countries, it is more likely that this group of countries will improve existing product lines or services instead of introducing new products or services. Because of this, both of these activities are taken into account in the empirical analysis.

The results of the empirical estimations indicate that most of the macroeconomic factors under investigation affect the innovation performance of firms in the middle-income European countries. While real GDP growth rate, domestic credit to private sector and final consumption expenditure affect both introducing new products or services and upgrading an existing product line or services, deposit interest rate (introducing new products or services) and unemployment rate (upgrading an existing product line or services) influence only one of the innovation activities of firms. According to coefficient estimates, real GDP growth rate and domestic credit to private sector have a positive effect on the innovation performance of firms. However, deposit interest rate, final consumption expenditure and unemployment rate have negative effects on the firms' innovation activities. The positive influence of real GDP growth rate and domestic credit to private sector is conceivable since economic expansion and increasing financial resources facilitate engagement of innovation activities. Moreover, when the effect of real GDP growth rate and unemployment rate are taken into account together, it becomes clear that innovation performance of the firms in the middle-income European countries is pro-cyclical. The negative influence of deposit interest rate indicates that increasing costs of financial resources makes engaging innovation activities more difficult for firms. Finally, the negative effect of final consumption expenditures on firms' innovation performance shows that consumers prefer existing products or services instead of new ones.

In conclusion, according to the results of empirical estimations, it is argued that most of the macroeconomic factors under investigation influence the innovation performance of firms. Hence, policy-makers

should take into account macroeconomic factors together with other firm-level characteristics in order to design economic policies that lead to high and sustainable economic growth and development rates in the middle-income European countries.

Notes

1. For a comprehensive literature review see Kamien and Schwartz (1982), Cohen and Levin (1989), Becheikh et al. (2006) and Damanpour (2010).
2. In the literature, although the exact source of the supply–push model seems dubious, some authors state that it is put forward by V. Bush in his work *Science: The Endless Frontier* (1945) (Bush 1995; Godin 2006).

References

Acs, Z. J., & Audretsch, D. B. (1987). Innovation, market structure, and firm size. *The Review of Economics and Statistics, 69*(4), 567–574.

Archibugi, D., Evangelista, R., & Simonetti, R. (1995). Concentration, firm size and ınnovation: Evidence from ınnovation costs. *Technovation, 15*(3), 153–163.

Arrow, K. (1962). Economic welfare and the allocation of resources for invention. In Universities-National Bureau Committee for Economic Research, Committee on Economic Growth of the Social Science Reserach Council (Ed.), *The rate and direction of inventive activity: Economic and social factors* (pp. 609–626). Princeton: Princeton University Press. http://www.nber.org/books/univ62-1.

Avermaete, T., Viaene, J., Morgan, E. J., & Crawford, N. (2003). Determinants of innovation in small food firms. *European Journal of Innovation Management, 6*(1), 8–17.

Becheikh, N., Landry, R., & Amara, N. (2006). Lessons from innovation empirical studies in the manufacturing sector: A systematic review of the literature from 1993–2003. *Technovation, 26*(5–6), 644–664.

Bhattacharya, M., & Bloch, H. (2004). Determinants of innovation. *Small Business Economics, 22*(2), 155–162.

Bush, V. (1995). *Science: the endless frontier.* (Reprint, 1945, North Stratford: Ayer Co).

Chandy, R. K., & Tellis, G. J. (2000). The incumbent's curse? Incumbency, size and radical product innovation. *Journal of Marketing, 64*(3), 1–17.

Cohen, W. M., & Klepper, S. (1996). Firm size and the nature of innovation within industries: The case of process and product R&D. *The Review of Economics and Statistics, 78*(2), 232–243.

Cohen, W. M., & Levin, R. C. (1989). Empirical studies of ınnovation and market structure. In R. Schmalansee & R. D. Willing (Eds.), *Handbook of industrial organization* (Vol. 2, pp. 1059–1107). The Netherlands: Elsevier Science B.V.

Crespi, F. (2004). *Notes on the determinants of innovation: A multi-perspective analysis*. FEEM Working Paper No. 42.04. Available at SSRN: https://ssrn.com/abstract=524503.

Dean, T. J., Brown, R. L., & Bamford, C. E. (1998). Differences in large and small firm responses to environmental context: Strategic implications from a comparative analysis of business formations. *Strategic Management Journal, 19*(8), 709–728.

Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management, 21*(4), 996–1010.

Di Stefano, G., Gambardella, A., & Verona, G. (2012). Technology push and demand pull perspectives in innovation studies: Current findings and future research directions. *Research Policy, 41*(8), 1283–1295.

Geroski, P. A., & Walters, C. F. (1995). Innovative activity over the business cycle. *The Economic Journal, 105*(431), 916–928.

Godin, B. (2006). The linear model of innovation: The historical construction of an analytical framework. *Science, Technology and Human Values, 31*(6), 639–667.

Hong, S., Oxley, L., McCann, P., & Le, T. (2016). Why firm size matters: Investigating the drivers of innovation and economic performance in New Zealand using the Business Operations Survey. *Applied Economics, 48*(55), 5379–5395.

Kamien, M. I., & Schwartz, N. L. (1982). *Market structure and innovation*., Cambridge Surveys of Economic Literature Cambridge: Cambridge University Press.

Khan, A. M., & Roy, P. A. (2011). Globalization and the determinants of innovation in BRICS versus OECD economies: A macroeconomic study. *Journal of Emerging Knowledge on Emerging Markets, 3,* 29–45.

Rogers, M. (2004). Network, firm size and innovation. *Small Business Economics, 22*(2), 141–153.

Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest and the business cycle*., Harvard Economic Studies Cambridge: Harvard University Press.

Schumpeter, J. A. (1942). *Capitalism, socialism and democracy*. New York: Harper & Brothers Publishers.

Schmookler, J. (1966). *Invention and economic growth*. Cambridge: Harvard University Press.

Sun, Y., & Du, D. (2010). Determinants of industrial innovation in China: Evidence from its recent economic census. *Technovation, 30*(9–10), 540–550.

Thompson, N. A., & Stam, E. (2010). *Macroeconomic dynamics and innovation: SME innovation in the Netherlands, 1999–2009*. Innovation Studies Utrecht (ISU) Working Paper Series, ISU Working Paper #10.03. http://www.geo.uu.nl/isu/pdf/isu1003.pdf.

Van Dijk, B., Den Hertog, R., Menkveld, B., & Thurik, R. (1997). Some new evidence on the determinants of large- and small-firm ınnovation. *Small Business Economics, 9*(4), 335–343.

Wagner, E. R., & Hansen, E. R. (2005). Innovation in large versus small companies: Insights from the US woods products ındustry. *Management Desicion, 43*(6), 837–850.

World Bank. (2016a). World Bank Country and Lending Groups. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

World Bank. (2016b). Enterprise Surveys. http://www.enterprisesurveys.org/.

World Bank. (2016c). World Bank World Development Indicators. http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators.

The Importance of Innovation in Small- and Medium-Sized Enterprises: The Turkish Experience

Kadir Tuna

Introduction

Innovation means technologies or practices that are new to a given society. They are not necessarily new in absolute terms—these technologies or practices are being diffused in that economy or society. This point is important: what is not disseminated and used is not an innovation. Dissemination is very significant and requires particular attention in low- and medium-income countries (World Bank 2010, p. 4). While innovation is important at all stages of development, different types of innovation play different roles at various stages. In earlier stages, incremental innovation is often associated with the adoption of foreign technology, and social innovation can improve the effectiveness of business and public services (OECD 2012, p. 4).

K. Tuna (✉)
Faculty of Economics, Istanbul University, Istanbul, Turkey
e-mail: kt1905@gmail.com

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_8

There is widespread agreement that innovation is an important driver of growth, especially in the long run. Despite this understanding, the conceptual and empirical links between innovation and growth are complex. Innovation is not a simple linear process, with a straightforward link between investments in innovation and economic or social outcomes (OECD 2015, p. 17) Several developments may offer opportunities for developing and emerging economies to engage in innovation (OECD 2012, pp. 7–8):

- As some emerging countries become more innovative, opportunities for new entrants are created. The vertical fragmentation of value chains and the consequent division of labour in East Asia seems to have increased as other countries (Cambodia, the Philippines, Vietnam) take over lower-value activities from China (the 'flying geese' development model).
- Information and communication technologies (ICTs) offer many opportunities for innovation.
- Global value chains offer a potentially different framework for development.
- Increasingly, service-based economies call into question manufacturing-based development strategies.
- Greater openness to trade and foreign direct investment (FDI) in the context of international treaties necessarily creates a very different context from that of the past.

The main purpose of this chapter is to investigate the development of small- and medium-sized enterprise (SME) in Turkey. The last 50 years has seen a far-reaching transformation of Turkey that has been accompanied by a significant strengthening of economic development and social well-being. Economic and political stability, as well as ensuring a level playing field, are prerequisites for building an environment in which individuals, firms and other actors, both foreign and domestic, are willing to invest in Turkey's future (Napier et al. 2004, p. 7). While Turkey continues its efforts to increase the competitiveness of the SMEs via the implementation of effective policies, it also explores the means of enhancing bilateral and multilateral cooperation in this area.

In this context, Turkey actively participates in the cooperation efforts of international and regional organisations. Furthermore, relevant Turkish agencies, especially the Small and Medium Size Enterprises Development Organization (KOSGEB), initiate partnership and cooperation agreements with relevant institutions in other countries to enhance cooperation in this field (Republic of Turkey Small and Medium Enterprises Development Organization 2012, p. 2).

There is a strong entrepreneurial culture in Turkey and, as in all other European countries, SMEs form the backbone of the private sector—representing by far the largest percentage of companies and employment in Turkey. The existence of a critical mass of innovative, internationally competitive SMEs that have the ability and willingness to grow will be a critical condition for Turkey's future growth and prosperity. SMEs play an important role in Turkey—fuelling economic growth, providing flexibility, engaging in bridge-building between Turkey and the European Union (EU) and promoting employment (Napier et al. 2004, p. 8).

However, despite this recognition, unfavourable framework conditions prevent SMEs from developing sufficiently. Official start-up rates of new businesses are very low in Turkey, in particular in and around the suburban areas, although it should be borne in mind that there are extensive activities in the informal sector and that lack of reliable entrepreneurial data further complicates comparisons in this field. Inadequate access to finance for entrepreneurial companies and weak international profiles among SMEs are identified as two of the main obstacles for securing a supportive SME environment in Turkey. Policy action is required in order to improve the business climate, especially for small firms (Napier et al. 2004, p. 8).

The Importance of Innovation

Innovation can make a difference in addressing urgent developmental challenges such as providing access to drinking water, eradicating neglected diseases or reducing hunger. The transfer and, when necessary, adaptation of technologies originating in developed countries can often

contribute significantly to these goals. Substantial research efforts are needed to find solutions that address other global challenges. Effective international cooperation that involves both public and private bodies is an important mechanism for finding these much-needed solutions (OECD 2012, p. 4). As part of the broader policy agenda, innovation helps to drive economic growth and address socioeconomic challenges such as poverty and health (OECD 2012, p. 10).

Knowledge is transformed into goods and services through a country's national innovation system. Its benefits become evident when it is employed within a complementary system of (a) knowledge-producing organisations in the education and training system, such as universities and research institutes; (b) macroeconomic and regulatory framework, including trade policies that affect technology diffusion; (c) communications infrastructure; and (d) diverse other factors, such as access to the global knowledge base. The ultimate objective of a well-functioning innovation system is to serve the needs of the economy by achieving full integration of science and technology infrastructure with the production base, increasing private sector participation in innovation and technology development, and developing strong linkages between industry, universities and research institutions (Goel et al. 2004, p. 14).

However, national innovation systems are effective only to the extent that the different elements work in harmony. A multi-pronged structure must be built to support national innovation from the birth of an idea to its ultimate commercialisation and production. The environment must be conducive to entrepreneurship, with key national policies, intellectual property rights protection and an appropriate system of standards and quality in place (Goel et al. 2004, p. 14).

There is widespread agreement that innovation is an important driver of growth, especially in the long run. Despite this understanding, the conceptual and empirical links between innovation and growth are complex. Innovation is not a simple linear process with a straightforward link between investments in innovation and economic or social outcomes (OECD 2015, p. 17).

Moreover, metrics for certain aspects of innovation suffer from limitations. This has made it difficult to establish the role that policies for innovation—in a broad sense—can play in shaping or strengthening

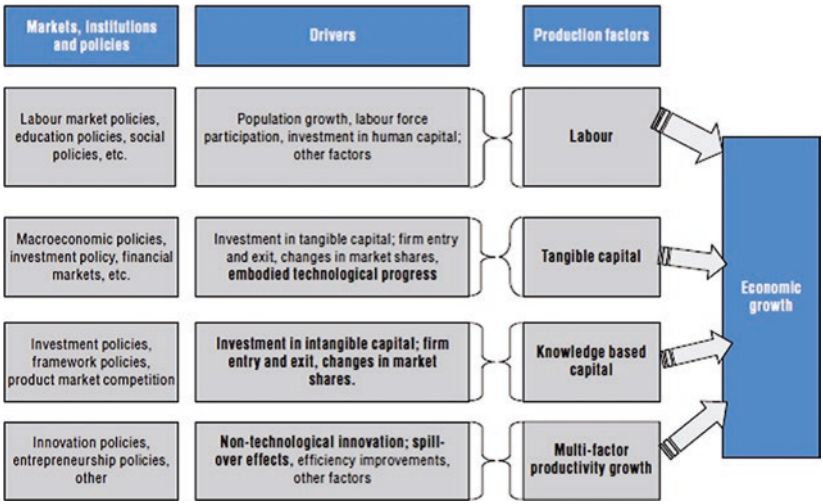

Fig. 1 A simplified framework to analyse economic growth (*Source* OECD 2015, p. 18)

innovation performance, with most analyses focusing only on certain aspects of innovation, such as spending on research and development (R&D). Despite these challenges, our understanding of the drivers and impacts of innovation continues to improve, and this chapter highlights some of the new evidence and policy insights emerging from recent work (OECD 2015, p. 17).

A key interest of policy-makers in innovation has long been around its potential contribution to economic growth. A long-established way to look at the relationship between innovation and economic growth is through a production function where growth in output results from the input of labour and capital (both tangible and intangible) and from increases in multifactor productivity (MFP), i.e. the part of output growth that cannot be explained by increased factor inputs. In such a framework, the contribution of innovation to growth can be found in three different places (OECD 2015, p. 17) (Fig. 1).

Technological innovation has always been at the heart of economic and social development and, as such, is essential to the further evolution of the developing world (World Bank 2010, p. 1).

The above-mentioned factors, in turn, are strongly influenced by a range of national, regional and locally determined conditions. Table 1 summarises some of these critical conditions and identifies some of the indicators that might be useful for assessing the extent to which these conditions are fulfilled.

Among the high-income group, four economies—Japan, the USA, the UK and Germany—have stood at the top positions in this innovation quality metric since its introduction. Japan is number 1 in this ranking; its scores for the quality of universities and citable documents have remained almost unchanged for the past 2 years.

Overall, the gap between high- and middle-income economies is still considerable. When excluding China, the gap in average scores between these two groups in both the quality of universities (33.1 points) and in citable documents (26.6 points) is expanding, while it is slightly narrower in patent families (28.8 points) (Fig. 2).

China is now the only middle-income economy with innovation quality scores that display a balance similar to that of high-income economies. The rest of the middle-income economies still depend on their top university rankings to improve their combined quality scores.

India (ranked 66th overall in the Global Innovation Index [GII]) swaps the third position for second with Brazil (ranked 69th in the GII). India's positive move is the result of its performance in university rankings, where it comes in second among middle-income economies and 20th overall, and in patent families, where—also because of methodological changes—it now ranks third among middle-income economies and 37th overall for this indicator. Brazil's performance, on the other hand, shows a slightly better score in citable documents but is affected by lower scores in the quality of universities and in the new patent family indicator.

Seychelles, Argentina and Hungary are no longer part of the top 10 group of middle-income economies in innovation quality. Seychelles is not included in the GII 2016 as a result of insufficient data coverage, and Argentina and Hungary are now classified as high-income economies. These shifts have led Mexico, Malaysia and Turkey—three economies that have been in the middle-income top 10 since this innovation

Table 1 Key determinants for innovative capabilities

Key determinants	Contributing factors	Indicator
Access to knowledge	• National science base (strength and access through industry-academic cooperation) • Private sector R&D • Ability to tap into international sources of knowledge generation through ICT (information and communications technology)	• Expenditure on R&D • Scientific publications • Researchers in die labour force • ICT access and usage (telephone, mobile phone, internet penetration) • ICT expenditure as & of GDP • Human development indicators • International cooperation on R&D
The ability to transform knowledge into products and services	• Human capital • Competitive private sector • Access to capital • Innovative activities	• Education statistics • Patenting activity • Venture capital supply • FDI • International competitiveness rankings • Growth/development of SMEs • Sector composition of manufacturing •Level and composition of foreign trade
The willingness to innovate	• Stable economic and political conditions • Entrepreneurship • Incentive structures • Collaboration between private sector and academia • Clustering and international networking activities	• Political and macroeconomic framework conditions (GDP growth, inflation, corruption, informal economy, etc.) • Number of start-ups • Number/performance of incubators, science or techno parks (or die like) • Regional development and clustering activities • Changes in firm organisation, including firm demography

Source Napier et al. 2004, p. 24

FDI foreign direct investment, *GDP* gross domestic product, *ICT* information and communication technology, *R&D* research and development, *SMEs* small- and medium-sized enterprises

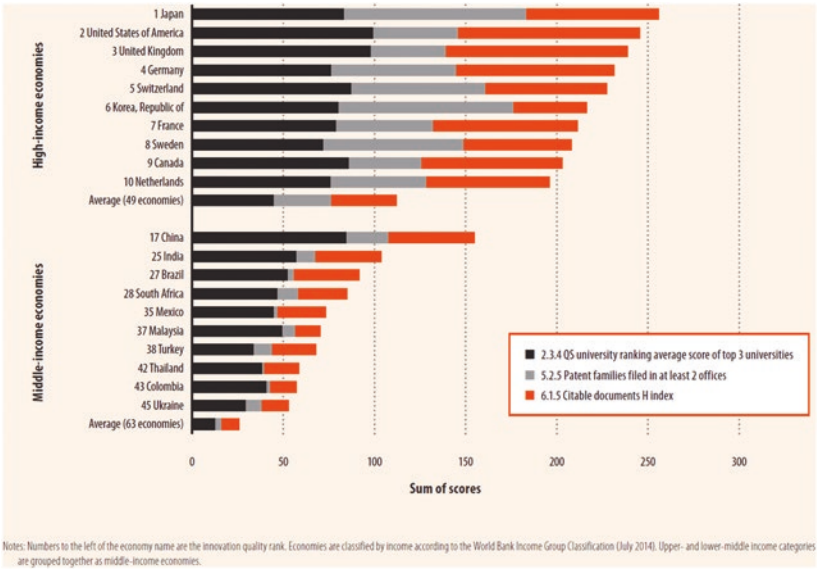

Fig. 2 Metrics for quality of innovation: top 10 high- and middle-income economies (*Source* Dutta et al. 2015, p. 19)

quality metric was introduced—to move ahead in the rankings. In particular, their rise can be credited to higher scores in the quality of universities for Mexico, a constant performance in all three innovation quality indicators for Malaysia and an improved score in patent families for Turkey. These shifts also allow Thailand, Colombia and Ukraine to enter the top 10 rankings of middle-income economies.

Innovation in Small- and Medium-Sized Enterprises (SMEs)

Recently, Turkey has shown great determination and progress in establishing a stable economic environment conducive to enterprise development and growth (Napier et al. 2004, p. 23). In particular, the rapidly growing importance of knowledge for welfare and competitiveness puts increasing focus on firms' and countries' ability to innovate.

Institutional and organisational conditions, access to knowledge, capital and labour markets, managerial capabilities and other human capital issues, incentive structures and attitudes are some examples of factors that will strongly affect the extent and pace of enterprise development in general, and of SME development in particular (Napier et al. 2004, p. 23).

While it may be easy to acknowledge the importance of competitiveness and innovative capacity for a country's long-term prosperity, measuring and comparing innovation is another thing entirely. A number of indicators have been developed in recent years, aimed at capturing and measuring countries' and firms' innovative capacity, such as, for example, investment in R&D, patents, levels of internet access and penetration, science and technology graduates, etc. There are many caveats when it comes to assessing both how much a country invests in innovation, or innovation inputs, and what returns it gets on this investment ('what it gets out of it'), or innovation outputs (Napier et al. 2004, p. 28).

Definition of SMEs in Turkey

SMEs are a very heterogeneous group that are found in a wide array of business activities, ranging from the single artisan producing agricultural implements for the village market, to the coffee shop at the corner or the internet café in a small town, to a small sophisticated engineering or software firm selling in overseas markets and to a medium-sized automotive parts manufacturer selling to multinational automakers in the domestic and foreign markets. The owners may or may not be poor, the firms operate in very different markets (urban, rural, local, national, regional and international), embody different levels of skills, capital, sophistication and growth orientation, and may be in the formal or the informal economy (OECD 2004, p. 10).

Turkish SMEs have played an imperative role in the privatisation wave speeding up the development with their flexibility and private sector involvement. Also, by taking an important part in cross-border activities and networks, SMEs facilitate a significant bridge-building

process between Turkey and countries in the EU, increasing the mutual understanding of cultural differences between Turkey and other regions (Napier et al. 2004, pp. 57–58).

In addition, a flourishing SME sector could also play a key role in overcoming the deep regional disparities characterising the Turkish economy, and SMEs serve as the principal 'training ground' for entrepreneurial activity and pave the way for increased innovative activity (Napier et al. 2004, p. 58).

The size of SMEs in Turkey is defined according to certain criteria: the number of employees, annual turnover and the balance sheet. The first criterion, number of employees, is the same as that adopted in the EU. However, financial criteria limits are less than those of the EU, due to the characteristics of Turkish enterprises (Republic of Turkey Small and Medium Enterprises Development Organization 2012, p. 3). As an enterprise that employs less than 250 persons per year. Micro enterprises are those that employ 1–9 persons, small enterprises employ 10–49 persons, medium-sized enterprises employ 50–249 persons and large enterprises employ 250+ persons.

The annual net sales revenue or balance sheet value of an SME does not exceed 40 million Turkish lira. SMEs constituted 99.8% of total number of enterprises, 73.5% of employment, 62% of turnover and 55% of gross investment in tangible goods in 2014 (TurkStat 2016).

Role of SMEs in the Turkish Economy

SMEs play an important role in the Turkish economy. They contribute to the creation of jobs, exports, economic growth and employment. SMEs are flexible production structures and are also a major source of technological innovation and development of new products (Republic of Turkey Small and Medium Enterprises Development Organization 2012, p. 3).

The proportion of SMEs that have 1–249 persons employed accounted for 55.1% of exports and 37.7% of imports in 2015. In 2015, micro enterprises made up 17.7% of all exports, small enterprises 20.3%, medium-sized enterprises 17.1% and large enterprises 44.8%. SMEs in the industry sector were responsible for 36% of export (Fig. 3) (TurkStat 2016).

Fig. 3 Basic indicators by size class, 2014 (*Source* TurkStat 2016)

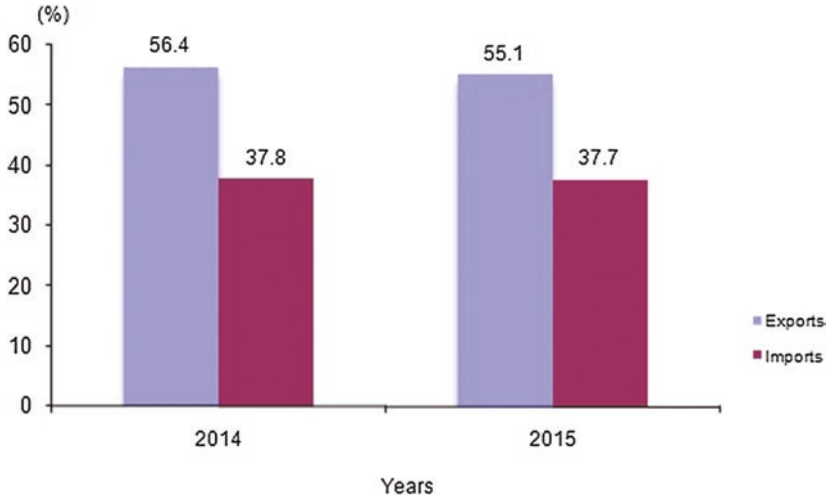

Fig. 4 Small- and medium-sized enterprises in external trade statistics in Turkey, 2014–2015 (*Source* TurkStat 2016)

In 2015, the rate of micro enterprises was 6.3%, small enterprises was 13.1%, medium-sized enterprises was 18.2% and large enterprises was 62.3% in imports. SMEs in the industry sector were responsible for 33.1% of imports and SMEs whose main activity was trade undertook 59.6% of imports (Fig. 4) (TurkStat 2016).

Table 2 Proportion of small- and medium-sized enterprises in manufacturing industry by size class and technology level in Turkey in 2014

Size class	Technology level			%
	High technology	Medium-high technology	Medium-low technology	Low technology
Total	**0.3**	**9.1**	**30.9**	**59.6**
1-19	0.2	8.3	31.1	60.4
2049	0.9	17.6	28.4	53.0
50-249	1.5	17.4	31.4	49.7
SME (1-249)	**0.3**	**9.1**	**31.0**	**59.7**
250+	2.6	18.8	24.7	54.0

Source TurkStat 2016
SME small- and medium-sized enterprise
Bold represents Proportion of small- and medium-sized enterprises in manufacturing industry by was 59.6% low technology in 2014

According to foreign trade by country groups, the proportion of exports to European countries and Asian countries made by the SMEs was 49 and 34.5%, respectively, in 2015. The rate of imports from European countries was 50.4% and Asian countries was 39.5% in 2015 (TurkStat 2016).

Wearing apparel made up 16% of exports, textiles 10.1% and basic metals 9.2%. SMEs imported chemicals and chemical products at a rate of 16.5%, machinery and equipment not elsewhere classified was 13.1% and basic metals was 10.5% in 2015 (TurkStat 2016).

SMEs in Turkey: Manufacturing Industry Technology Level

While 59.7% of SMEs in the manufacturing industry worked with a low technology level, 54% of employment and 43.4% of value-added factors costs were generated by these enterprises (Table 2) (TurkStat 2016).

With regards to size class, 60.4% of micro enterprise SMEs worked with low technology, 31.1% with medium–low technology and 8.3% with medium–high technology. In small-enterprise SMEs the technology levels were 53, 28.4 and 17.6% for low, medium–low and

medium–high technology, respectively, and in medium-sized enterprises SMEs the respective shares were 49.7, 31.4 and 17.4% (TurkStat 2016).

Gross domestic expenditure on R&D in Turkey was 20 billion 615 million Turkish lira in 2015; SMEs accounted for 17.7% of R&D expenditure. The total number of full-time equivalent (FTE) R&D personnel was 122,288 in 2015; 27.5% were employed in SMEs (TurkStat, www.turkstat.gov.tr, 2016).

Conclusion

SMEs play an important role in Turkey, fuelling economic growth, providing flexibility, engaging in bridge-building between Turkey and the EU, and promoting employment (Napier et al. 2004, p. 51). Given that there does not seem to be an adequate base of entrepreneurs willing and able to change this situation, the indicators on sectoral composition and trade are quite discouraging (Napier et al. 2004, p. 51).

Although there are positive trends in business environment indicators (in particular in relation to starting a business), there is still much concern over taxation and incentives provided to industry to promote research collaboration (Napier et al. 2004, p. 51). At the same time, the Turkish SME sector must adapt itself to globalisation and hence increase its ability to compete internationally and benefit from global development.

Beyond doubt, Turkey must address a number of challenges to strengthen its basis for innovation, competitiveness and growth. The situation calls for a national strategy to enhance innovation capacity, in which improved conditions for SME development must constitute a critical element (Napier et al. 2004, p. 88), along with forming a more coordinated and functional structure for innovation policy governance; improving the national ICT infrastructure; developing local/regional action plans for innovation; fostering better conditions for SME growth and entrepreneurial activity; strengthening the supply chain of financial resources and investors; facilitating FDI; and strengthening absorptive capacity of the domestic economy from spill-over effect (Napier et al. 2004, pp. 88–90).

References

Dutta, S., Lanvin, B., Wunsch-Vincent, S. (2015). The Global Innovation Index 2016 effective innovation policies for development

Goel, V.K., Koryukin, E., Bhatia, M., & Agarwal, P. (2004). Innovation systems.

Napier, G., Serger, S. S., & Hansson, E. W. (2004). *Strengthening innovation and technology policies for SME development in Turkey*. Malmo: IKED.

OECD. (2004). Promoting entrepreneurship and innovative SME's in a global economy: towards a more responsible and inclusive globalisation

OECD. (2012). Innovation for development.

OECD. (2015). The innovation imperative.

Republic of Turkey Small and Medium Enterprises Development Organization. (2012). Enhancing the competitiveness of SMEs.

TurkStat. (2016). http://www.turkstat.gov.tr.

World Bank. (2010). Innovation policy: a guide for developing countries.

Designing an Innovative School: Organisational Learning, Educational Leadership and School Improvement

Hanifi Parlar

Introduction

Different factors determine innovation in developed and developing countries. Innovation basically emerges in two forms: creating new information via researching a specific subject extensively and performing experiments, in other words making research and development (R&D) investments, is the most fundamental innovation creation mechanism; and obtaining information by being inspired by or transferring the innovations others have made is another mechanism. Whereas the first mechanism can be carried out mostly by developed countries, developing countries cannot produce innovations based on their own internal endeavours due to insufficient and unqualified physical and human capital accumulation, creating a vicious circle, and also to financing problems experienced. Thus, developing countries produce

H. Parlar (✉)
Faculty of Arts and Sciences, Istanbul Commerce University, Istanbul, Turkey
e-mail: hanifiparlar@gmail.com

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_9

innovation mostly by transferring technology and information via mechanisms such as imports from developed countries or direct foreign investments. This situation indicates that the influencing aspect and extent of the determinants of innovation can vary with respect to the developmental level of countries. In addition, developed countries and less developed countries are highly differentiated in terms of the average literacy level of their populations. Underdeveloped countries are characterised by a low participation level in higher education and, in addition to this, highly educated individuals from these countries leave their countries to gain better personal opportunities.

Nowadays, it is an indisputable truth that the most important element required for the development of any society is 'improving the quality of the education process'. Education, which is a period of processing and improving the potential of individuals, is a very powerful social transformer. Every step taken with respect to education harbours the opportunity to lead to fundamental changes in the social sphere.

It is also a precondition to have innovative ideas in order to create a change. However, if an idea has not matured into an action over a significant period of time and has not become scalable within the framework of specific criteria, it remains limited to only feeding the mind in which it was born. The power to change the world is possible at the point at which a modelable, applicable and sensible process under the economic conditions is completed.

In the globalising world, it is not possible to evaluate the educational processes independently of economic and technological developments. In the twenty-first century, if education has the qualities to stimulate creativity and entrepreneurship, it should develop competitiveness and competitiveness in scientific and analytical thinking, problem solving and allowing different assessment and evaluation systems. Then, these are the questions that should be asked: how are we going to gain this competence? How can we support the education processes with technology and internalize the necessary competence? What kind of environments should we create in order to uncover education motivation? How should we transform our assessment and evaluation systems?

A great number of the innovations that have changed the world were the dream of a person who was able to imagine. Only if a person

concentrates on a subject with their heart, mentally and physically, and yearns to achieve no matter what, can he succeed. From the same point of view, companies and countries reach their targets in as much as they create such an ecosystem. In order to ensure the continuity of social and economic development, the answer to the question 'what kind of education?' has a dynamic and complex characteristic, which reshapes every day in parallel with the changes and developments in the world and in Turkey. While an answer is being sought for this question, the innovations in education should be addressed relating to various aspects, such as (a) how the schools and classes of the future will be formed; (b) what fundamental skills and values education policies and programmes will focus on for the future; and (c) how accountability and computations can be used in the development of education systems and education applications.

Innovation

Innovation studies are carried out all over the world and in all areas, depending on increased information on the innovation and on the requirement for it. In particular, the fact that innovation is one of the key elements for the level of competition experienced further increases the importance given to innovation by organisations.

According to the *Oslo Manual* (TÜBİTAK 2005), which was prepared by the Organisation for Economic Co-operation and Development (OECD) and the European Commission, innovation is "the implementation of a new or significantly improved product (good or service) or process, of a new marketing method or a new organizational method in intra-business practices, workplace organization or foreign relations". Innovation studies have an important place, especially in terms of the foreign relations and commercial development of the business.

Various definitions have been given for innovation over time. Some of these definitions are as follows:

- Schmookler (1966): "If a business has developed a new product or service for itself or has used a new method or input for itself, then

this means that it has made a technical change. The business that has firstly made a certain technical change is a business that has made the innovation, this practice is the innovation."
- Becker and Whisler (1967): "It is the first application of an idea by one of the organizations with similar objectives."
- Knight (1967): "Innovation is the implementation of a change which is new for an organization and its surrounding."
- Downs and Mohr (1976): "Different practices in organizations."
- Goldhar (1980): "Innovation that comprises the process from the suggestion of the opinions to commercialization is the series of organizational and individual behaviour patterns associating with the defined resource allocation decision points."

Innovation Requirement

Innovation provides at a better level of fulfilment of individual and social needs. Innovation is essential for the spirit of entrepreneurship, and each innovation initiative arises at the end of a process. In particular, there is a need for a continuous renewal to be able to survive in the competitive environment experienced today. At the end of an experienced innovation, the welfare and standard of living increase in a country, depending on the increase in the competitiveness, and innovation is necessary to increase productivity for competitive power. Innovation is the key to countries achieving economic growth and increasing employment and quality of life. With innovation, it is possible to gain economic by transforming the resources of the country and society into products and services. Society acquires much higher returns from the same source by innovation.

As specified in the *Oslo Manual* (TÜBİTAK 2005), the basic characteristics of innovation at the business level are as follows:

- The results of innovation activities will not be known in advance, and the innovation process involves many uncertainties, although some predictions can be made in advance. For instance, how much time and the resources needed for implementing a new production

process, the marketing or organisational method needed and to what extent these will be successful cannot be known in advance.
- Innovation can achieve success in businesses with which it is financially compatible.
- Innovation becomes widespread by being imitated by companies outside of those that make the innovation.
- Innovation involves benefiting from new information or the new use of existing information, or a combination of these.
- It is aimed that differences in cost curves, demand curves, profit charts and competition will be a result of innovation.

Innovation has an effect of gathering people around a purpose and leading them to work as a team. Innovation also encourages an organisation to look outside itself and prevents it from being self-enclosed. Especially in periods during which some organisations are withdrawn and some are spiralling downwards, an organisation that knows its own targets and can gather its creative intelligence around the same purpose will have the chance to climb back up (Yalçın 2010, p. 9).

Chuang (2005, p. 302) investigated managerial innovations under the three subgroups of personnel innovation, market innovation and organisational structure, and climate innovation, and investigated technical innovations under the two subgroups of product innovation and process innovation.

Educational Leadership

Organisational Learning: Learning School

When the literature on the subject is analysed, it can be seen that organisational learning is emphasised to be one of the precursors of innovation in many studies (Vakola and Rezgui 2000, p. 177; Nielsen and Nielsen 2009, p. 1050; Lee et al. 2010, p. 293). From this point of view, it can be said that organisational learning is a critical component of the innovation process because it provides the basis for the

formation of new ideas (Chen et al. 2009, p. 488) underlying the innovation and supports creativity (Meeus et al. 2001, p. 407). The critical roles of organisational learning in the process of creating innovation can be grouped under two headings as "*providing support to information management"* and "*developing creative ability*" (Avcı 2009, p. 127). Innovations are based on new information created by learning at the individual, group, organisational and/or industrial level (Luecke 2008, p. 37). Thus, the ability to innovate can be defined as a result of the combination made between the existing information and new information to be created in organisations (Morden 2007, p. 418). The level of innovation (incremental, radical and destructive) is associated with the creation and/or use of the new information at a high or low level (Therin 2002). Therefore, the level of an innovation reflects the field of new knowledge embedded in that innovation. Organisational learning provides the basis for new innovations by developing creativity, which reflects the ability to apply this information and ideas (Garcia-Morales et al. 2011, p. 158) as well as providing the development of new information and ideas. Creativity, which can be defined as an ability to bring together ideas in an original format or to make connections, which were unknown or unexpected until that day, between the existing ideas (Eren and Gündüz 2002, p. 66), is a driving force of innovation. Therefore, it can be said that organisations' learning ability has a significant effect and role on creating innovation (Weerawardena et al. 2006, p. 39). In this context, Hurley and Hult (1998, p. 45) stated that organisational learning could be observed by creating innovation based on the observation of individual learning in the form of changes that occur in behaviours.

Characteristics of the Twenty-First Century School

According to Shaw (2008), not only having informatics knowledge but also the sense of raising individuals who are capable of using this knowledge have come to the forefront in the twenty-first century. Therefore, schools must raise individuals who are sensitive to the problems of society and humanity, investigate, produce solutions and can take responsibility. In addition, the meaning of literacy has also changed. In the

new age, literacy is defined as a characteristic including factors such as multiculturalism, visual–print media, access to information, protecting humanitarian aspects, being sensitive to the environment, economic literacy and knowledge, and having knowledge of communication technologies (Shaw 2008).

Mulford (2003) stated that school's functions have been redefined in the twenty-first century. Schools and administrators keep communities from lagging behind by preparing individuals for future changes. In other words, there is close cooperation between schools and communities. Schools have an important role in presenting socio-economic changes to the community function in offering socioeconomic changes to the community. In this context, a school administrator is a person who both administers the school and provides interaction with the society. Riehl (2000) states that one of the duties of the school administrator in the new age is to strengthen the interaction between the community and school. In this context, the role and duties of the school administrator stand out as being determined to achieve academic objectives, creating a school atmosphere where student success is supported, using all kinds of resources, being motivating and dynamic, and creating a stable learning environment, the rules of which have been established explicitly (Glasman and Heck 1992).

Educational Leadership Qualifications of School Administrators

The duties of school administrators have become complex and multidimensional in the twenty-first century (Gaston 2005). The fact that school administrators can effectively accomplish these duties is possible with participatory decision-making processes, which means including opposing views and ideas into the decision-making process (Weiss and Cambone 1994). In other words, participatory decision-making is when the administrator, teachers, parents, students, personnel and other relevant people voluntarily participate in the decision-making process (Gibson et al. 1988). Fullan and Newton (1988) also state that school administrators are responsible for participatory planning, following the

innovations for the viability and sustainability of the plans, and using information for this purpose.

According to Weiss and Cambone (1994), the outstanding characteristic of the twenty-first century school administrator is exhibiting change-oriented leadership behaviours. Change-oriented leadership is turning towards the change by bringing teaching, the curriculum and school problems to the centre. Accordingly, Podmostko (2000) suggests that educational leadership is one of the new duties of the school administrator in the new century. According to him, educational leadership should focus on accelerating the teaching–learning process, professional development, decision making and accountability based on the data.

Cuban (1985) states that educational objectives are one of the main dimensions of school administration duties. Lyons (2010) also shares this opinion. According to him, one of the duties of the school administrator is to organise the school and keep teachers' motivation high for teaching and learning. In this context, Lyons (2010) states that educational leadership is one of the duties of the modern school administrator. Educational leadership involves planning, coordinating, guiding and evaluating the provided education.

Markley (2008, pp. 7–19) divides the scope of the new leadership duties of school administrators as follows:

- Pedagogical and educational leadership
- The duty of administration
- Educational programme leadership
- Determining the vision of the school together with teachers, families and the social environment
- Providing resources to teachers and other employees for a more effective school
- Strengthening and protecting relationships between teachers
- Preparing a realistic budget
- Increasing students' learning success
- Establishing effective communication.

Educational Leadership

According to Riehl (2000), school administrators are responsible for creating special conditions and applications for the needs of the students with different learning capacities. This duty can be performed in two dimensions: (1) shaping the learning and teaching environment for students with different learning capabilities to be successful; and (2) creating a school culture that accepts that there may be different qualifications and acting according to this. Consequently, educational leadership is a supportive and facilitating catalyst which activates these processes.

Santos (2008) states that the limits of the school administrators' role have expanded and altered because of the change in the nature of the relationships between the public, which is constantly renewing itself, external environment and parents. So, now, the school administrator has to fulfil many duties and also maintain the effectiveness of the school as a leader in education. In this sense, the school administrator has a first-degree responsibility for the effectiveness of the school. The school administrator should be a leader who attributes a vision to the school, designs a mission, brings innovation and is ready to give account. In addition to these primary duties and roles, the school administrator tries to solve the structural problems of the school, creates a safe school environment, resolves any staff problems, organises records and follows up on matters, and guides teachers. However, above all of these duties, maintaining and improving the effectiveness of teaching are the primary duties of school administrators and are also the centre of all of their duties.

The most basic function of educational leadership is to lead teaching. In order to support effective teaching, school principals should encourage innovative teaching, offer a range of educational strategies and help teachers in implementing a wide variety of educational methods (Behar-Horenstein 1995, p. 18). For effective educational leadership, school administrators should fulfil the following duties, which are associated with each other: (1) guide student success; (2) evaluate teachers; (3) support teachers' professional development; (4) ensure harmony

between the taught and the testee; and (5) use unique methods in evaluating students (Behar-Horenstein 1995, pp. 16–17).

The School Administrator as a Continuous Learner

According to Reyes-Gonzalez (2007, p. 18), school administrators in the new age are expected to be model persons who have effective and research-based knowledge of pedagogical practices and also transfer these skills to students and teachers. In addition, school administrators are expected to take the lead in making changes that are necessary for students to be successful in learning by analysing the evaluation results. When it is considered from this point of view, the most important characteristic of school administrators as a leader in the twenty-first century is the fact that they are both learners and teachers.

School administrators as learning leaders allow and provide opportunities for the development of school staff compatible with the school climate. Learning leaders are leaders who are compatible with social change and development and bring these to the school. Erçetin (2000) adds another dimension to the issue. According to him, the school administrator as a leader should have a vision. A visionary leader identifies important duties and ideals to be realised at the school as a whole, and establishes the common ideals of the school by sharing them with other personnel.

According to Markley (2008, p. 53), modern school administrators are expected to prepare their schools for changes in a faster way and to reflect these changes in their schools. Leaders with this understanding and qualifications support the development of teachers using the limited resources at their disposal, ensure their schools are a more secure place, and include students, parents and other segments of society in the process. In this context, the challenge for school administrators as leaders is the fact that they have to fulfil the duties of leading and teaching–learning simultaneously. Reyes-Gonzalez (2007) notes that the school leader of the twenty-first century is expected to meet the increasing expectations for student success and the demands related to daily tasks.

The duties of school principals have considerably changed, and these changes require school administrators' compliance with these conditions. Therefore, school administrators should make an effort for change and prepare themselves for their effective roles in the future in order to guide the changes.

To guide the future changes, effective school principals are expected to have the following qualifications (Behar-Horenstein 1995, p. 19):

- Access to research-based information related to change
- Defining the nature of effective change
- Following changes in other schools and benefiting from them
- Setting the direction for professional development
- Determining the stages of how school personnel can be led in the processes of teaching, curriculum and cultural change.

When the opinions expressed here are summed up, school administrators not only have administrative duties but also the duty of ensuring the changes required by the entire school system. When considered from this point of view, an effective school administrator is a primary person who is in a key position for the development of the school and who makes changes. In this context, the roles of today's school administrator can be listed as suggesting ethical aims, developing relationships, creating expectations, increasing educational capacity, being a model in learning, managing efficiently, responding to the needs of all relevant people and making a strategic plan (Coffin 2004).

School Improvement

School improvement is the creation of internal conditions to achieve educational objectives as the final goal in one or more schools through changes in the teaching–learning process and/or making school more effective. The main purpose of school improvement is to increase the school's capacity to solve problems. Therefore, school-based school-scaled strategies are preferred over central change strategies.

The main purpose of school improvement should be to equip people who will constitute the society of the future with the knowledge, skills and qualifications that they will need. Because skills are getting more complicated day-by-day in business and community life, and expert thinking and complex communication skills and the skills of transmitting good ideas effectively are coming into prominence, schools should be aware of this and continuously improve their education systems (Parlar 2014, p. 398).

School improvement is a process. The effects of the school climate, institutional memory of the school, expectations of the community, global viewpoints, school administrators' knowledge, skills and implementation competencies, the expertise of teachers in their jobs and human relations, developments in information and communication technologies, and international examinations/cooperation are undeniably strong in establishing models.

School improvement is a significant policy design that is determined by the central/local administration. Students, teachers and parents are at the centre of school improvement. The individual schools, which are the engines of school improvement, increase the quality of learning and teaching. Teachers, parents and students become open to innovations and changes by following the programme in an explicit and systematic way. This also ensures easier and more useful daily life at school. On the other hand, the school should be positioned to respond to the changing social issues and prepare students for a positive future. According to Rolff (2008, p. XVII), school improvement in this way moves together with educational development, organisational development and personal development within the framework of a particular system.

As indicated by Fullan (1991, cited by Dalin 2005, p. 4), the process of change in schools and school improvement is shaped by the status of the social structure, the expectations of the community and the viewpoints of the researchers/practitioners. Dalin (2005, p. 4) states that innovations and strategies are focused according to three sources of contemporary school improvement, as follows:

- Curriculum and teaching
- Organisation development
- The fact that the decision-making process is not focused on a single source.

Although many schools work on school improvement, there is no known example of a school for which the agenda topic is replete with an implementation of a reform that will prepare students for the twenty-first century. Dalin (2005, p. 32) states that schools will become old-fashioned, lose community support and be able to fulfil only a much smaller mission unless they prepare for the problems of the future. According to him, some of the problems faced by schools are as follows:

- Connecting the foundations of the current curriculum and the curriculum that will prepare students for the twenty-first century;
- Defining and developing the curriculum of the future;
- Moving towards creativity and production in various environments by moving away from the traditional reproduction process in the classroom;
- Moving away from fixed ideas identified for the future by trying to complete unfinished;
- Decreasing most of today's activities significantly, and defining and developing a new school organisation providing environment for students and teachers;
- Preparing personnel and other human resources for new roles and a new curriculum using the best available approaches in personnel development and benefiting from human resources from all sections of society;
- Performing political studies in local communities across the country in order to establish partnerships for 'the school of the twenty-first century'.

In other words, the school improvement model includes finding solutions to these problems. Therefore, the studies of 'personnel development', 'teaching/course development' and 'organisational development' are three basic components of the model.

In brief, the requirements of and reasons for 'school improvement' (U.S. Department of Education 1998; Fitzpatrick 1994; Geijsel et al. 2001; Gould 2005) are as follows:

- Changes in schools' general and social conditions

- Globalisation and its effects on education
- Rapid changes and developments in science and technology
- Society's expectations of the school and their criticisms
- The necessity to fulfil the expectations of a life-long learning and information society
- Effects of rapid developments for teaching techniques, strategies and programmes
- In addition to the basic functions of education, globalisation, modern developments such as efforts to become a member of the European Union, and the information society, it is necessary for the Turkish education system to organise in a structure that learning to learn can produce and spread information, investigate, examine, think critically, and reconcile national and universal values, with a vision to raise individuals who can think strategically
- The need for the improvement and strengthening of schools from economic, technological, organisational and administrative aspects for the development of society
- The pursuit of solving problems related to quality
- The necessity to strengthen social capital
- Increases in opportunities of multichannel education
- The fact that the changes that characterise the post-modern society force both individuals and educational institutions to change and develop
- International education comparisons.

Why School Improvement? Reasons and Requirements for School Improvement

Change in organisations is inevitable in parallel with social development. In particular, the education system/schools should raise individuals according to the demands of society.

Developments in public administration also affect organisational structures and constitute the main source of changes in the function and structures of organisations (Eryılmaz 2010, p. 8). Organisations do not develop by themselves; they develop in accordance to the effect of the components of public administration (organisation, public policy,

financial resources, public officials, normal order and the public). The education system is also affected by the new public order, as the most important element of society, and schools have become development centres where individuals will be raised in accordance with the qualifications required by the new world order (Eryılmaz 2010, pp. 9–10).

Towards the end of the 1980s, an approach expressed using concepts such as 'business administration', 'new public management', 'market-based management' and 'entrepreneurial management' emerged in the management of the public sector in developed, and especially in Anglo-Saxon, countries (Eryılmaz 2010, p. 17). According to Eryılmaz (2010, s. 21), this approach proposed principles such as 'decentralisation', 'deregulation' and 'delegation' by drawing public attention to the inefficient factors in the functioning of the traditional public organisational structure.

In other words, new management is an approach that interpreted and led the change in the structure and activities of the economic and administrative system after 1980, which emerged as an alternative to traditional management and largely took its place (Eryılmaz 2010, p. 27). Therefore, educational organisations also had to improve themselves in parallel with the new management and also with its compelling effect.

Concepts such as total quality management, strategic management, performance management, market mechanisms and competition care have also become widespread in both the public and private sector. Therefore, it is seen that this and similar approaches also affect school systems/organisations, new regulations and practices that are performed, and schools are considered as the organisations that 'continuously improve/should continuously improve' within the context of these concepts.

The speed of social development brings change, continuous innovation and quality in educational institutions as well as in all institutions. While modernism is mainly described by classical liberal theory, globalisation should be described within the framework of neo-liberal theory. In this context, the duties of the state remaining from the welfare state should be rearranged. New Public Management is the new management model for public administration within the frame of the neo-liberal

model. The education system is also considered within this framework, and the means of improving the quality of this system is presented as the total quality management model in education (Hesapçıoğlu 2003, p. 148).

According to Hesapçıoğlu (2003, p. 155), 'effectiveness'/'productivity' is the key concept of the new management approach: "The school/education of the information society is the effective school/effective education. The total quality management approach has been developed as a means of organizational change within the context of the external change, in other words, as the means of performing effective school/effective education."

Social developments may lead to significant changes and developments in the education field as well as in all fields. This change and development primarily affect the educational programmes and programme development and require educational programmes appropriate to the basic structure and needs of the community. The innovations and changes in the education system directly affect the educational programmes, which are the basic building blocks of the education system. The educational programmes of the information society should be appropriate to its characteristics. Furthermore, school improvements are contributed to by school-based management, learning schools, organisational change and innovation, creating effective schools, strategic planning and value-added model studies.

The development of the community and schools is inevitably an opportunity for progress and advancement. The school cannot move ahead if it maintains its existing state: it will either develop or maintain its existing state, i.e. it will go backwards. Because school improvement is basically the development of individuals, schools are the focal point of improvement. Therefore, school improvement cannot be considered independently from society improvement. In this context, it is possible to create a desired future which is longed for schools. Administrators, teachers, students, parents and the community can shape the future of schools by working together. As stated by Fer (2000, p. 5), "the parties become stronger when they share their powers with each other because the shared power brings along the gained power. Administrators and

teachers can suggest their developmental objectives and strategies in cooperation with local authorities and can acquire the necessary knowledge and skills to achieve these objectives."

Features and Outcomes of Improved Schools

Success underlies school improvement. The school is responsible for increasing student success, ensuring employees' happiness and peace, meeting the expectations of families and society, and raising people qualified to meet the needs of the twenty-first century. The schools that fulfil these responsibilities at the highest level can be defined in terms such as *effective school*, *continuously developing school*, *learning school*, *a school with a high sense of responsibility* and *a school with high performance*. The factors that make a school successful have been outlined by Bergeson (2005, p. 17) as follows:

- Being open and share-based
- Creating high standards and expectations
- Effective school leadership
- High-level cooperation and communication
- Curriculum, education and assessment in parallel with the standards
- Frequent monitoring of teaching and learning
- Intensive professional development
- Supportive learning environment
- High-level community and parental interest.

In addition, schools that attach importance to quality, effectiveness and student development have some basic standards, and institutions that structure, improve and develop the school are known as efficient and improved institutions. According to international evaluation institutions, these basic standards relate to the following (ADVANCED 2007, pp. 12–21):

- School's vision and objectives
- Administration and leadership style

- Teaching and learning process
- Using documentation and the results
- Resources and supportive systems
- Communication and relationships
- Commitment to continuous improvement and development.

The results of organisational performance are also very important in school improvement. However, the key performance indicators of a school/institution are not limited to the following indicators; all results are related to the performance of the school/institution. Examples of key performance indicators could be as follows (Joyce et al. 1999, pp. 122–126):

- Success levels of the school for the class and each course
- Results obtained in various competitions, projects produced at school or publications
- New process design
- Effectiveness and efficiency in the use of buildings, equipment and materials
- Student/teacher ratio
- Benefiting from library, information processing and information technology
- Cooperation with universities and other organisations related to education
- Schools sharing and relationships with the other schools and the environment
- Environmental and natural sensitivity.

According to data obtained from 120 new studies, which were carried out under the editorship of Shannon and Bylsma (2007, pp. 27–119), and school improvement documents, improved schools are defined as the schools with a high performance. Nine features of these schools are listed as follows:

1. *Open and Common Focusing*. Everyone knows where to go and why. There is a common vision. Everyone is interested and everyone

understands their role in fulfilling the vision. The vision is developed from common beliefs and values and builds a compatible focus.

2. *High Standards and Expectations.* Teachers and staff believe that all students can learn and they can teach all students by themselves.
3. *Effective School Leadership.* Effective leadership is required to implement the processes of change within the school, and there are many forms of this leadership. Although principals mostly play this role, teachers and other staff also undertake this role.
4. *High-Level Cooperation and Communication.* There is continuous, bilateral and multiple cooperation and communication between teachers from all classes. Everyone, including parents and members of the public, is interested in and associated with solving problems and finding solutions.
5. *Curriculum, Education and Assessment Suitable for the Standards.* The curriculum complies with the Basic Academic Education Regulation. Research-based materials and teaching and learning strategies are implemented. The assessment system, what is assessed and how to assess are understood explicitly.
6. *Frequent Monitoring of Teaching and Learning.* Teaching and learning are continuously regulated and there should also be frequent monitoring of students' progress and needs. Various assessment procedures are used, and the results of the evaluation are used to improve student performance and the curriculum.
7. *Focused Professional Development.* The professional development is in compliance with the common focus, objectives and high expectations of the school and the region for all educators.
8. *Supportive Learning Environment.* The school has a secure, civilised, healthy and intellectually encouraging learning environment. Students feel respected faithful along with the staff, and they are interested in learning. Teaching is individualised, and small learning environments increase students' communication with teachers.
9. *High-Level Interest of the Community and Parents.* There is an understanding that everyone carrying out the business of education are responsible for educating not only teachers and staff but also students

at the school. Parents, the business world, social service organisations and community colleges/universities have a vital role in this effort.

A New School Improvement Model: Holistic Approach

School improvement is a critical process with strategic depth. In particular, school administrators are responsible for being aware of the internal and external factors and carrying out studies that consider these factors at the beginning of the process/in the functioning of the process of school improvement. The out-of-school factors affecting school improvement are the *changes in education and development*, *improvement and development studies*, *national and international competition conditions in education*, and the *national and international obligations* (Fig. 1). There are three major axes in this school improvement model: organisational development, curriculum content development and personnel development. School administrators should fulfil the potential of the 'school improvement plan', existing resources of the institution (material and human resources) and all employees by considering these components with an institutionalisation and visionary leadership approach (Table 1).

Visionary leadership, awareness and change are at the core of the model. In other words, a 'qualified person' constitutes the foundation of the model. The model achieves success by the synchronisation of internal and external dynamics. The 'holistic school improvement model' is the point of view that will ensure the approach that will enable the organisation to be sustained (i.e. will extend the life of the life-cycle graph) by ensuring its successful improvement/institutionalisation through continuing process and result-oriented studies that will provide this synchronicity (Fig. 1).

The prominent and essential concepts in this model are:

- Change, awareness and development
- National and international obligations
- Competition conditions
- Improvement and development

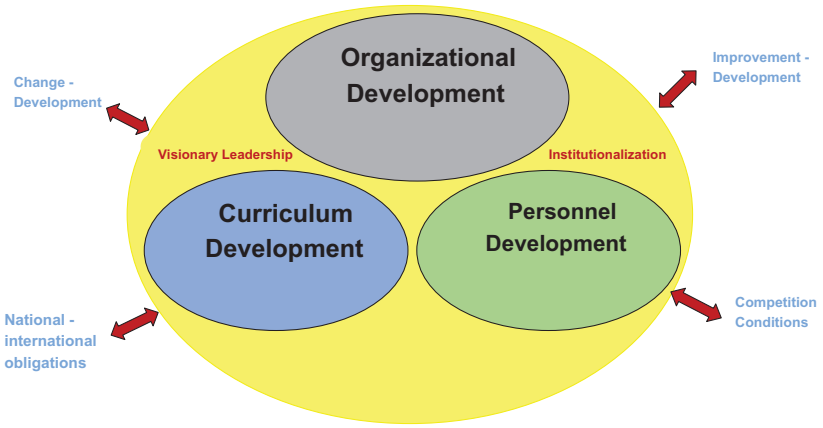

Fig. 1 Holistic school improvement model

- Visionary leadership
- Institutionalisation
- Organisational development
- Personnel development
- Curriculum/programme development.

The holistic school improvement model means that those people or units responsible for school improvement—*all employees and all units are responsible*—should take into account the national and international competition conditions and carry out organisation, curriculum and personnel development studies to meet the expectations of parents and students who are receiving service from the school by being aware of local and global changes and developments while performing school-institutionalising studies with a visionary viewpoint.

Faith, internal motivation, a positive and constructive approach, decisiveness, determination and support of the administration are required in order for this model to be successful. Decision-makers and administrators should fulfil the requirements of the model with a stable stance and patience without neglecting any of them or preferring any over the other.

Conclusions

It is important to emphasise that the education system, especially universities, aims to spread basic information, build technical and scientific abilities, and finally encourage and develop research in laboratories in terms of innovation. In this context, the national innovation system approach emphasises interactions between universities and the producing system and the success gained by the USA in encouraging such cooperation has been highlighted (Soete et al. 2009, p. 22).

Nowadays, the fact that there are no underdeveloped countries with a high level of human capital or, vice versa, no developed countries with a low level of human capital reveals, in a way, that one of the factors behind developed countries' successful development performance is the level of human capital. On the other hand, in the existing new economy period which is based on information, the demand for qualified human capital rapidly increases. Therefore, many developed and developing countries have increased their spending on education with the purpose of developing their human capital and thus being able to join the innovation period.

To create a better social, cultural and economic future can be realised with an innovative understanding of every area of education and innovative applications. Currently, to have sustainable competitive power in education, as in every area, is only possible with improvement and activation of the capacity for innovation.

Based on this framework, educating students for the future together with the new trends in education and 'improving the quality of education process', with a focus on innovation concepts in education, have constituted the primary goal of this study. Thus, educational institutions need to be restructured with an innovative and creative approach, educational processes need to be reconstituted and human resources need to be improved.

References

ADVANCED. (2007). Accreditation standards for quality schools. Retrieved April 12, 2009 from http://www.browardschools.com/sacs_casi/pdf/advanced_district_standards.pdf.

Avcı, U. (2009). Öğrenme Yönelimliliğin Yenilik Performansı Üzerine Etkisi: Muğla Mermer Sektöründe Bir İnceleme [Effect of learning orientedness on innovation performance: An investigation in Muğla marble industry]. *ZKÜ Sosyal Bilimler Dergisi, 5*(10), ss. 121–ss. 138.

Becker, S., & Whisler, T. (1967). The Innovative Organization: A Selective View of Current Theory and Research. *The Journal of Business, 40*(4), 462–469.

Behar-Horenstein, L. S. (1995). Promoting effective school leadership: A changeoriented model for the preparation of principals. *Peabody Journal of Education, 70*(3), 18–40.

Bergeson, T. (2005). School improvement planning-process guide. Retrieved Oct 30, 2009 from http://www.k12.wa.us/SchoolImprovement/sipguide.aspx.

Chen, J., Lıu, Z.C., Wu, N.Q. (2009). Relationships between organizational learning, innovation and performance: An empirical examination. *International Conference on Information Management, Innovation Management and Industrial Engineering*. IEEE Computer Society, 26–27 Dec, Xi'an, China, pp. 488–492.

Chuang, L.-M. (2005). An empirical study of the construction of measuring model for organizational innovation in Taiwanese high-tech enterprises. *Journal of American Academy of Business, 6*(1), 299–304.

Coffin, E. (2004). The 21st century principal: A call to action. The importance of developing leadership capacity for the improvement of student learning. Retrieved Jun 21, 2012 from http://www.casciac.org/pdfs/principal_position_paper.pdf.

Cuban, L. (1985). Principaling: Images and roles. *Peabody Journal of Education, 63*(1), 107–119.

Dalin, P. (2005). Developing the twenty-first century school: A challenge to reformers. In D. Hopkins (Ed.), *The practice and theory of school improvement*. Dordrecht: Springer.

Downs, G., & Mohr, L. (1976). Conceptual Issues in the Study of Innovation. *Administrative Science Quarterly, 21*(4), 700–714. doi:10.2307/2391725.

U.S. Department of Education. (1998). Comprehensive School Reform Program (CSR). U.S. Department of Education. Retrieved May 9, 2011 from http://www2.ed.gov/programs/compreform/csrdoverview/edlite-ts%C4%B1d005.html.

Erçetin, S. (2000). *Lider Sarmalında Vizyon [Vision in leader spiral]*. Ankara: Nobel Yayıncılık.

Eren, E., & Gündüz, G. (2002). İş Çevresinin Yaratıcılık Üzerindeki Etkileri ve Bir Araştırma [Effects of Business Environment on Creativity and a Research]. *Doğuş Üniversitesi Dergisi, 5,* 65–84.

Eryılmaz, B. (2010). *Kamu yönetimi [Public administration]*. Ankara: Okutman.

Fer, S. (2000). OECD. Eğitim Göstergelerinin Türkiye Eğitim Politikalarına Yansımaları [Reflections of the OECD education indicators on Turkey's educational policies]. *Eğitim Yönetimi Dergisi, 6*(21), ss. 97–ss. 109.

Fitzpatrick, A. (1994). School improvement through teacher decision making. *School Improvement Research Series (SIRS)*. Retrieved Nov 13, 2009 from http://educationnorthwest.org/webfm_send/527.

Fullan, M. G., & Newton, E. E. (1988). School principals and change processes in the secondary school. *Canadian Journal of Education, 13*(3), 404–422.

Garcıa-Morales, V. J., Matıas-reche, F., & Verdu-jover, A. J. (2011). Influence of internal communication on technological proactivity, organizational learning, and organizational innovation in the pharmaceutical sector. *Journal of Communication, 61,* 150–177.

Gaston, W. D. (2005). Defining the roles and responsibilities of public school assistant principals in Virginia [unpublished Ph.D. thesis], Williamsburg, The College of William and Mary in Virginia.

Geijsel, F., Sleegers, P., Vanden, Berg R., & Kelchtermans, G. (2001). Conditions fostering the implementation of large-scale innovation programs in schools: Teachers' perspectives. *Educational Administration Quarterly, 37*(1), 130–166.

Gibson, J. L., Ivancevic, J. M., & Donnelly, J. H. (1988). *Organizations*. Dallas: Business Publications.

Glasman, N. S., & Heck, R. H. (1992). The changing leadership role of the principal: Implications for principal assessment. *Peabody Journal of Education, 68*(1), 5–24.

Goldhar, J. D. (1980). Some modest conclusions. In *Management of Research and Innovation*. Amsterdam, New York: Oxford.

Gould, J. (2005). School improvement plan. The revised school code (excerpt) Act 451 of 1976. Retrieved Nov 19, 2009 from http://www.michigan.gov/documents/mde/37._Joslin-Gould_Michigan_School_Improvement_Law_156983_7-h_276462_7.pdf.

Hesapçıoğlu, M. (2003). Okul, 'New public management' ve Toplam Kalite Yönetimi [School, 'new public management' and total quality management]. *Kuram ve Uygulamada Eğitim Bilimleri/Educational Sciences: Theory & Practice*, 3(1), ss.145–165.

Hurley, R. F., & Hult, G. T. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *The Journal of Marketing, 62*(3), 42–54.

Joyce, B. R, Calhoun, E., Hopkins, D. (1999). The new structure of school improvement: Inquiring schools and achieving students (ERIC Document Reproduction Service no. ED439493). (14 April 2009). Philadelphia: Open University Press.

Knight, K. E. (1967). A descriptive model of the intra-firm innovation process. *The Journal of Business, 40*(4), 478–496.

Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs-an intermediated network model. *Research Policy, 39,* 290–300.

Luecke, R. (2008). İş Dünyasında Yenilik ve Yaratıcılık [Innovation and Creativity in the Business World]. Çev.: Turan PARLAK, İstanbul: İş Bankası Kültür Yayınları.

Lyons, J. E. (2010). The principalship. Retrieved Apr 17, 2010 from http://www.education.uncc.edu/jelyons/Erişim

Markley, D. L. (2008). The changing roles and responsibilities of the high school principal [unpublished Ph.D. thesis]. Chester: Widener University.

Meeus, M. T. H., Oerlomans, L. A. G., & Hage, J. (2001). Sectoral patterns of interactive learning: An empirical exploration of a case in a Dutch region. *Technology Analysis & Strategic Management, 13*(3), 407–431.

Morden, T. (2007). *Principles of strategic management*. Burlington: Ashgate Publishing.

Mulford, B. (2003). *School leaders: Changing roles and impact on teacher and school effectiveness.* Education and Training Policy Division, OECD. Retrieved January 11, 2010 from http://www.oecd.org/edu/teacherpolicy.

Nielsen, B. B., & Nielsen, S. (2009). Learning and innovation in international strategic alliances: An empirical test of the role of trust and tacitness. *Journal of Management Studies, 46*(6), 1031–1056.

Parlar, H. (2014). *Tüm Yönleriyle Okul Geliştirme [School improvement with all its aspects]*. Ankara: Nobel Yayınevi.

Podmostko, M. (2000). Leadership for student learning: Reinventing the principalship. School Leadership for the 21st Century Initiative. *A report of the task force on the principalship*. Institute for Educational Leadership, Washington. http://www.iel.org/publications/21st-century-schoolleadership.

Reyes-Gonzalez, S. (2007). Professional vitality: Perspectives from nine school principals [unpublished Ph.D. thesis]. Pullman: Washington State University, College of Education.

Riehl, J. C. (2000). The principal's role in creating inclusive schools for diverse students. *Review of Educational Research, 70*(1), 55–81.

Rolff, H. G. (2008). Konzepte und Verfahren der Schulentwicklung. Fernstudium.

Santos, J. (2008). The responsibilities and leadership attributes of principals in opening newly constructed schools [unpublished Ph.D. thesis]. Stockton: Benerd Schools of Education, University of the Pacific.

Schmookler, J. (1966). *Invention and economic growth*. Cambridge: Harvard University Press.

Shannon, G. S., & Bylsma, P. (2007). *Nine characteristics of high-performing schools: A research-based resource for schools and districts to assist with improving student learning*. Olympia: Office of the Superintendent of Public Instruction (OSPI).

Shaw, A. (2008). *What is 21st century education.* Retrieved Feb 5, 2010 from http://www.21stcenturyschools.com/.

Soete, L., Verspagen, B., Weel, B.ter. (2009). Systems of innovation. (*UNU-MERIT Working Papers,* no: 2009-062). Maastricht: UNU-MERIT, Maastricht Economic and Social Research and Training Centre on Innovation and Technology.

Therın, F. (2002). Organizational learning and innovation in high-tech small firms. *Proceedings of the 36th Hawaii International Conference on System Sciences,* IEEE Computer Society, 6–9 Jan, Hawaii.

TÜBİTAK. Ekonomik İşbirliği ve Kalkınma Örgütü [Organization for Economic Cooperation and Development], Avrupa Birliği İstatistik Ofisi., & Türkiye Bilimsel ve Teknik Araştırma Kurumu. (2005). Oslo kılavuzu: Yenilik verilerinin toplanması ve yorumlanması için ilkeler [Oslo manual: Guidelines for the collection and interpretation of innovation data] (3. bs.). İstanbul: OECD, TÜBİTAK.

Vakola, M., & Rezguı, Y. (2000). Organizational learning and innovation in the construction industry. *The Learning Organization, 7*(4), 174–183.

Weerawardena, J., O'Cass, A., & Julian, C. (2006). Does industry matter? Examining the role of industry structure and organizational learning in innovation and brand performance. *Journal of Business Research, 59,* 37–45.

Weiss, H. C., & Cambone, J. (1994). Principals, shared decision making, and school reform. *Educational Evaluation and Policy Analysis, 16*(3), 287–301.

Yalçın, M. (2010). İşletmelerde İnovasyon Gücünün Ölçümlenmesi ve Tarım ve Gıda Sektöründe Yöresel Bir Araştırma [Measuring the power of innovation in businesses and a regional research in the agriculture and food industry] [unpublished Masters thesis]. Kütahya: Dumlupınar Üniversitesi Sosyal Bilimler Enstitüsü.

Effects of Innovation and Financial Performance on Companies in the Middle Income European Countries

Mustafa Yurttadur

Introduction

Innovation is a value that has great importance in the globalised world. With the help of innovation, companies can develop themselves and stand out within their industry. Disseminating innovation within the company is the best way to ensure this. Training more qualified staff and innovation-oriented employees is very important for companies striving for innovation; it is an accepted fact that innovation gains value through technological developments. Companies that keep up with technological developments stand out amongst other companies through their innovative approach.

Innovation, performance and financial performance are closely linked concepts. Innovation increases the performance of firms and also positively affects productivity. Innovative organisations have a stronger

M. Yurttadur (✉)
Faculty of Economics and Administrative Sciences, Istanbul Gelisim University, Istanbul, Turkey
e-mail: myurttadur@gelisim.edu.tr

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_10

corporate structure than other organisations, and having an innovative corporate structure facilitates organisations to attain a more dynamic framework.

In this chapter, the effects of innovation, performance and financial performance on firms are explained in detail. It is considered that the benefit to the national economies in which these firms exist provided by the impact of financial performance and innovation is important, and that both of these concepts go hand in hand with economic development. Special emphasis has been put on the example of Turkey, giving the Arçelik and Vestel companies as examples of the financial performance data and innovations that are required to be fulfilled for other countries to avoid the middle-income trap. The concept of innovation, which has increasingly gained great importance, is enlightened by illustrating the superiority of the Arçelik and Vestel companies in their industries. Vestel and Arçelik have gained strength in both the domestic and foreign market and they are still industry-leading companies. Middle income European countries with point passed certain stage in terms of per capita income needs closer attention. When countries give the required importance to the disclosed issues, they move from the middle-income trap to the high-income level. Consequently, due to this welfare-enhancing situation, it has been emphasised that social and economic development will take place in an easy way. Besides the nature of financial performance measurement, special emphasis has been put on the impacts of such a measurement and that financial performance and innovation need to be carried out together to reach these results. Briefly, the financial performance of the companies that have applied innovation reach a high level of productivity and subsequently the country's economic data improves and the nation reaches a further stage of development.

The Concept of Innovation

The importance of the innovation concept is one of the topics that is very often emphasised by researchers. One of the factors that makes the subject so important is that it plays a crucial role in organisations'

survival. The concept of innovation was first cited in *The Theory of Economic Development* and *Capitalism, Socialism and Democracy* by Joseph Schumpeter in the early twentieth century as the greatest power behind economic development (Becheikh et al. 2006, p. 644).

In Wolfe's work (1994), focusing on the concept of innovation, it is quoted that 350 theses and 1300 articles had been written on innovation by 1994. However, despite all that has been written on it, the concept of innovation hasn't been fully explained yet. Today's events prove innovation to be necessary and each innovation is a booster for new differences abroad. Consequently, innovation is a must for adapting to changing conditions (Elçi 2005, p. 1).

In the concept of innovation lies the idea of doing what has not been done yet, conceiving what has not been conceived yet and producing whatever has not been produced yet. The main goal of organisations in a competitive environment should be self-development for serving the time. Discussing the concept of innovation should include the degree and field of the innovation. Innovation can be a new a product, organization or a process. Organisations have access to innovations in two ways: purchase and production. When organisations buy the innovation they are not expected to be 100% successful. However, if the organisation has the ability and power to produce the innovations, it can be considered that the organisations are developing themselves (Iraz 2005, p. 105).

The development or innovation of a product requires a brain that has the capacity to reason in a different way and to surpass existing opinions. Innovation in this sense is a never-ending action. It is very important to develop an idea that is thrown into the pot in order to make it useful for organisations. The concept of innovation is an important way for organisations to gain competitive advantage and increase profits and cashflow. It is vital for organisations to obtain competitive superiority in a world of changing conditions and technological improvement. Organisations unable to obtain competitive superiority will experience stagnation, decline and then a fall after a while. Balancing creative ideas with demand and putting these ideas into effect is possible only by cultivating an innovation culture within the organisation (Zerenler et al. 2007, p. 653).

Nowadays, many variations have been experienced within the managerial structure of societies. Societies now wish to hire people with higher qualifications and greater abilities. Having easy access to technology and knowledge has gained crucial importance. Since societies are often in contact with the external environment, they closely follow the changes in the environment. To balance these innovations, original ideas and staff able to apply these rules are required. The removal of frontiers—a natural consequence of globalisation—caused the removal of knowledge limits as well. Confronted with sweeping knowledge, societies are obliged to adapt. All of these reasons set out the indispensable nature of the innovation concept (Armbruster et al. 2008, p. 645).

The Features of Innovation

In order to be successful, innovation should present a new service, improve an already existing service or lower its cost. Further studies are needed to aid in successful innovation activities. Innovation has some characteristic features as shown below (Gül 2012, pp. 99–100):

- The result of the innovation efforts is unknown ex ante. For example, it is not possible to know in advance how much time and resources are required to apply a new production process or a marketing or organisational method, and to what degree these will bring success. In a general sense, the innovation process is affected by the innovations, developments and changes occurring outside of the organisation.
- Innovation can be successful in the companies with financial complience.
- Innovation expands through other companies imitating the innovation, etc.
- Innovation includes benefiting from new information or a new use of already existing information, or a combination of both of these.
- The objective of innovation is to differentiate the cost curves, demand curves and profit graphs.

Basic Science →Design and Engineering →Manufacturing →Marketing →Sales

Fig. 1 The use process of technology push power through first generation innovation (*Source* Rothwell 1994, p. 8)

Not assessing the concept of innovation as a holistic action may cause important problems. For instance, if innovation is considered taking into account research and development (R&D) only, the product produced may not satisfy the consumer's need (Elçi 2006, pp. 24–25).

The Innovation Process

The innovation process is defined as the conversion of a new idea or a new invention into a commercial activity. Simplistically, the innovation process may be described as developing product and technological progress. Although we briefly explain the innovation process, a good amount of research has been carried out on this subject previously. The formation process of innovation is mapped as a sequence of actions. The product innovation in the structure associated with this model has two variations. The first and simpler of the two is the 'technology push' model (shown in Fig. 1). In this model, it is observed that scientists are able to make real some unexpected inventions, and that these inventions are transformed into prototypes by technology experts to develop ideas that have to be tested by designers and engineers.

The function of the production department is to look for ways to yield production. It is the duty of the marketing department to let the potential customer have the products that have been produced. However, although some sectors tried the push model, only medicine sector fully adopted to this model. Thus, it was not very successful at the end.

New studies were carried out in the 1970s on innovation and the innovations experienced led to the 'market pull' model, one that takes

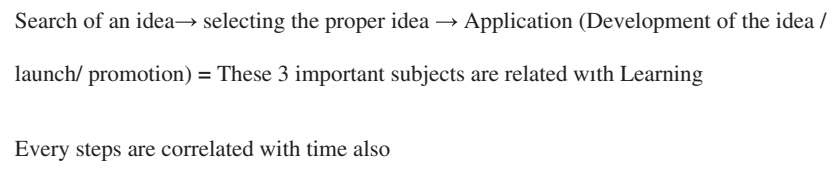

Fig. 2 Simple representation of the innovation process (*Source* Tidd et al. 2005, p. 348)

into consideration the user's demands. Through this model, the user's opinions are transmitted first to the R&D department and then to the production department. Thus, the two models display quite contradictory behaviours (Buijs 2003, p. 77).

While the innovation formation process models were quite simple when they first appeared, as the innovation process developed the models started to get more complicated. Figure 2 provides a simple representation of the innovation process.

The model shown in Fig. 2 is a very simple representation of the innovation and excludes the sub-dimensions of the process. The stages constituting the innovation process and the values associated with the stages can change over time. As the value attributed to the stage increases, the value of the investment made to the innovation increases as well. For all of these reasons, detailed thought and assessment are required at the idea stage. A process that is incomplete or incorrect at the idea stage will experience severe financial loss later (Koçel 2010, p. 383).

The Concepts of Performance and Financial Performance

Performance is a concept that defines the degree to which a person is able to make use of his potential or real knowledge, skills and talents to reach his objectives and expectations. In other words, it is the rate of successfully finishing a job in a certain period of time. The word 'performance' is of French origin and is translated as 'job success'. The word

performance in its brief sense is considered as seeing a thing through (Erşangur 2003, p. 36).

As can be concluded from the definitions, before mentioning the concept of performance, the determination of an objective is required. If reaching the objective is considered to be 'success', the concept of performance goes in parallel with it. Even if the concept of performance is associated with many other concepts, actually they indicate the same one. Performance is related to the rate of productiveness of a person commissioned in an organisation and the degree to which the commissioned person agrees with as the organisation's objectives (Özkaya 2013, p. 3).

The measurement of financial performance has previously been carried out by means of financial indicators that reflect the entire situation. However, under the current competitive circumstances, companies are not able to attain sustainable success by assessing financial performance (Kılınç et al. 2008, p. 157). The researchers, on the basis of criticism that not only financial indicators give information about long-term performance, included indicators reflecting the company's long-term performance. Within this framework, business performance indicators can be split in two basic categories: financial performance indicators, which are taken into consideration particularly by shareholders; and organisational performance indicators, which assess efficient and effective use of the resources that are the crucial components of long-term business success (Southern 1999, p. 366). However, after analysing the studies of business performance measurement, it can be observed that in recent years non-financial performance indicators have started to prevail (Avcı 2005, p. 5). Behind this lies the fact that financial indicators are based on past performance and that non-financial indicators provide information on the current situation and the future of the company. Accordingly, companies using business performance measures can treat the past and present together and are able to forecast more accurately (Folan et al. 2007, p. 605).

High-performance companies are those that do the right jobs in a correct way. They produce the products and service demanded by their customers with a higher quality and a lower cost. New entrepreneurships launched within these companies become reality in a shorter

time and with a higher rate of productiveness. As can be drawn from the definitions, the word performance doesn't have a unique answer; its definition is relative and may vary from person to person. Performance in a general sense is the result and productiveness obtained from a task attributed to a person. If the results are positive, it is understood that the staff member is successful; however, if the result is negative the employees' behaviour may be taken under review. Performance may be assessed as the compliance of the employee to the company's goal and objectives and the result of activities while reaching these objectives (Barutçugil 2002, p. 5).

Components of Performance

There are six components that constitute the concept of performance:

(1) Thriftiness
(2) Productiveness
(3) Efficiency
(4) Quality
(5) Profitability
(6) Effectiveness.

All of the components that are listed above constitute the concept of performance together. A discussion of each of the listed components of performance is provided in Sections Thriftiness–Effectiveness.

Thriftiness

The only performance component that never loses its importance and does not change is thriftiness. Thriftiness by its simplest definition is to go to the target objective by the way that is the shortest and with the lowest cost. The thriftiness component as it is expressed here is the selection of the way with the lowest cost; however, during this process none of the company's objectives should be neglected and while

lowering the cost there should be no concessions on quality (Akal 2005, p. 11). If this balance is well-maintained, companies shall be successful. Frugality in financial performance can be defined as maximising profitability by minimising costs.

Productiveness

Productivity in its general sense is the efficient use of resources in the production of goods and services. Expressed in other words, productiveness is a rational lifestyle that aims to do the right jobs in the right way. It is the database or an economic indicator of how the resources of the organisation are consumed (Akal 2005, p. 44). It is easier for companies to achieve the optimum level for future approaches by making the most efficient use of resources.

Efficiency

Efficiency expresses the rate of reaching objectives. Organisations are as efficient as they are close to their objectives when an assessment is made about their situation at the end of a period. In brief, efficiency can be expressed as the compatibility between the plans of the organisation and the job they do. Efficiency is considered an indicator of the compliance between the determined objectives and the jobs that are done and whether these jobs were carried out on time, at the proper quality and the requested quantity. In its economic dimension, efficiency is defined as obtaining the maximum productiveness with the minimum effort. For organisations, the efficiency concept is qualified as the success of the companies. To survive under circumstances of intense competition, businesses have to achieve maximum productiveness with a minimum of resources. Use of unnecessary resources is one factor that causes the most damage to the company. The efficiency component of performance is considered the criterion of success (Akal 2005, p. 34). In terms of efficiency, financial performance is considered to be a measure that reveals to what degree the financial size or the financial target is achieved.

Quality

Quality is a dimension of performance that ensures suitability of products and services for use, imposes the production and service needs of the customer and ensures the company fulfils its public responsibilities. Quality can be understood easily by means of the consumer's review of the product or service. For the product or service to have good quality, credibility and reliability are required. In brief, quality is the situation in which the product is suitable for the customer's need and satisfies the customer's expectations. Until the mid-1980s, the concept of quality was about the solidity and service of the products produced in the manufacturing sector. However, in the following years, the concept of quality expanded to all sectors and became considered a 'must' feature (Akal 2005, p. 49). Companies with good use of financial resoures has positive impact on the public and customer needs, therefore has good financial performance.

Profitability

Profit and profitability is a relationship established between revenues and expenses. Profitability is not only an increase in the profits. Profit is not the fundamental goal of a company but it shows the result of the efforts carried out by the company and is a guarantee for the future of the company. The profit is an award—as is the counterpart of the share of capital given to reward to uncertainty risk taken by an investor—and is an instrument for the company to make a contribution to society. Profitability is a concept that comprises 'being economical' and 'being productive'. It is an indicator that is very easy to measure and understand. If the company is productive and effective, it means that profitability has already been obtained (Demirel 2007, p. 5). The term profitability will be understood with this definition. Profitability is one of the key criterions that reveal the financial performance of companies. It is possible to argue that companies with high profitability are companies that have an efficient financial performance.

Effectiveness

Effectiveness is to obtain the highest performance by using the material resources and labour force at their lowest rate. It is an indicator of the success of the company's activities. The objective of effectiveness is the capacity to produce the output in the frame of the current technology with the minimum possible input. In this regard, companies have to make various decisions in the mid- or long-term to obtain the maximum output with the least input. Whether a company is effective or not is a conclusion to be drawn from the comparison with rival companies in terms of productiveness (Dikmen 2007, pp. 2–3). When companies are able to reach the highest level of profitability and financial performance by making use of the financial sources at the lowest level is considered a situation showing that these companies make the best use of effectiveness from the financial point of view.

Analysis of the Relationship Between Innovation and Companies' Financial Performance

Innovation can generally be considered the key point for companies wishing to create a difference by having a great success on the competitive market. In a fiercely competitive environment, to achieve success the companies should provide unique offerings in order to satisfy the customer. The concept of innovation is a significant instrument for unlocking these crucial points. Innovation activities are expressed as those pursued for internal reasons by the companies to expand their area of activity, raise their service quality and have access to high-level objectives in order to have some different external features in the form of competition, resources and customer demands. Innovations are carried out for two reasons: fulfil the conformity with the environment, and to keep up the continuity of their performance (Auken et al. 2008, p. 38).

The company's innovation activities cause a speed-up in production, productivity growth and increased income. Innovation activities are

considered to be a firm step towards creating a difference in a globalising world in which competition is fierce. In order to achieve superior competitive performance, it is proven that the companies need to benefit from the concept of innovation. Innovative organisations adapt faster than their competitors to the events in their environment. The contribution that innovation makes to the companies differentiates them from their competitors (Zhang 2011, p. 122).

The Arçelik Company

The innovation motto of the Arçelik Company is "Arçelik means innovation". The Telve traditional Turkish coffee maker made by Arçelik is a product that brings an innovation to the market. The contributions made by the Arçelik are summarised as follows (Arçelik Annual Sustainability Report 2014, p. 39):

- Received many awards in the field of advanced technology and innovation in 2014.
- Won the 'Innovation Grand Prize' at the Young Turkey Summit activity, which was organised with the participation of 3000 university students from universities in 165 countries and 81 provinces of Turkey, with the main theme of 'Think Innovatively, Manage the Future', and with the strategic partnership, accumulation and cooperation of the Yıldız Technical University, Turkish Ministry of Youth and Sports, Turkish Ministry of Science, Industry and Technology, Istanbul Metropolitan Municipality, Turkish Exporters' Association and Istanbul Chamber of Commerce.
- Won the 'Jury Special Prize' for the "Enhanced User Interfaced and Multi-Application Network Connected LED TV (Enhanced Connected TV)" at the Innovation Creativity Awards, organised for the twelfth time in 2014 by TESID (Turkish Electrical Industry Association).
- Won two prizes at the "Energy Efficiency in Industry" (SENVER) Project Competition organised annually by the Ministry of Energy and Natural Resources at the Energy Efficiency Forum and Fair: the 'Most Efficient Product' award in the 'Energy Efficient Product' category for

the "A+++ −10% dryer", and the Jury Special Award in the category of 'Most Efficient Industrial Facility' for the Dishwasher Operation.

The innovativeness of the Arçelik Company enhances a good number of successes on the market. Through its R&D activities, Arçelik is one of the original companies in the sector making a great difference. By developing itself, the performance data associated with the company grows every year, as shown in Table 1.

The Vestel Company

The Vestel Company, by means of the innovations that it has introduced in recent years, is a company that has received a number of awards. Vestel—a Turkish brand—produces its own technology to present in Turkey and around the world. In 2015, Vestel went a step further in the field of innovation and introduced UHD television and satellite receiver devices supporting Android TV™. Apart from having access to rich content, Android TV™ has been developed to provide consumers with one of the best experiences while watching television. Vestel Android TV™ products supported with Full Band Capture Tune can transmit a broadcast to other television devices compatible with Android, providing the ability to watch different channels at the same time but also to record the broadcast on the hard disk or storage devices (Vestel Annual Report 2015, p. 9).

Making real an initiative that would take their focus on innovation one step further in 2015, Vestel Ventures was founded to support entrepreneurs with innovative ideas. Vestel Ventures is an 'angel investor' that provides seed capital to aid entrepreneurships that are at the idea stage. In addition, the entrepreneurs benefit from R&D counselling and advice regarding production possibilities; the commercialisation of the entrepreneurship is supported. In order to receive seed capital support, the innovative, competitive, marketable, expandable and sustainable criteria of the entrepreneurship are taken into consideration.

Vestel has received many awards for its innovative activities, including Vestel Elektronik being awarded 35 prizes at the design contests at which it participated in 2015:

Table 1 Performance data of the Arçelik company

Performance data	2010	2011	2012	2013	2014
Economic performance data					
Net sales (million €)	3487	3633	4581	4395	4307
By region					
Turkey (million €)	1718	1712	1933	1826	1670
Europe (million €)	1342	1437	1779	1735	1835
Other (million €)	427	484	869	832	802
By product group					
White goods (million €)	2208	2394	3072	3906	3121
Consumer electronics (million €)	631	625	780	636	629
Other (million €)	648	614	729	663	557
Gross profit (million €)	1040	1094	1325	1342	1369
Operating profit (million €)	321	278	326	338	352
Pre-tax profit (million €)	330	265	270	295	252
Net profit (million €)	276	233	237	247	220
Total assets (million €)	3573	3764	4349	3886	4394
Total short-term current responsibility (million €)	1143	1445	1676	1393	1571
Total responsibility (million €)	1910	2269	2679	2476	2835
Equity (million €)	1663	1494	1676	1409	1559
Dividends paid (million €)	55	113	150	160	122
Investment expenses (million €)	127	157	209	207	159
Dividend (€)	0.186	0.191	0.228	0.176	0.178
Year-end share price (€)	3.81	2.50	4.98	4.14	5.32
Year-end market value (million €)	2572	1692	3362	2796	3593
Corporate governance rating note	8.55	8.59	9.11	9.28	9.41
Generated economic value (million €)	7347	8927	10,991	12,005	13,231
Income (million TL)	7347	8927	10,991	12,005	13,231
Distributed economic value (million TL)	6911	8774	10,977	11,941	13,030
Total operating cost (million TL)	5745	7135	9049	9375	10,310
Personnel expenses (million TL)	706	824	995	1136	1346
Payment for source provider (million TL)	389	736	844	1355	1283
Corporate income tax paid to the state (million TL)	62	71	82	67	82
Investments for the benefit of society (million TL)	9	8	7	8	9
Accumulating economic value (million TL)	436	153	14	64	201

Source Arçelik Annual Sustainability Report 2014, p. 58)
TL Turkish lira

– **A Design Award 2015**
  - *Gold A Design Award:* Venus 3R 5″ Smartphone; Kahveci Turkish Coffee Machine
  - *Silver A Design Award:* Venus Polychrome Smartphone; Envo Electric Vehicle Charger
  - *Bronze A Design Award:* Venus 3R 5.5″ Smartphone
– **Plus X Award 2015**
  - *Plus X Award for Design:* Envo Electric Vehicle Charger; Kahveci Turkish Coffee Machine; Lal Turkish Coffee Machine; Sade Turkish Coffee Machine
  - *Plus X Award for Design and Ease of Use:* Repubblica Remote Control; RC38100 Remote Control; Venus 3R 5″ Smartphone; Venus 3R 5.5″ Smartphone; Venus Polychrome Smartphone
  - *Plus X Award for High Quality, Design and Ease of Use:* 55330 Slim Edge Led TV; 55360 Slim Art Led TV.

The Vestel Company has been an innovator many times in terms of technology in Turkey. Vestel enlarges its growth capacity every year in order to take its place among big brands. Because of the value that it attributes to the concept of innovation, the company's income table between the years 2012 and 2015 has strengthened every year, as shown in Table 2.

Table 2 Performance data of the Vestel company

	2015 (31/12)	2014 (31/12)	2013 (31/12)	2012 (31/12)
Total revenue	9250.46	7767.3	6217.96	7028.97
Revenue	9250.46	7767.3	6217.96	7028.97
Other revenue, total	–	–	–	–
Cost of revenue, total	7292.39	6197.42	5133.48	6190.41
Gross profit	1958.07	1569.88	1084.48	838.56
Total operating expenses	8938.19	7622.51	6081.28	7128.72
Selling/general/administration expenses, total	1212.94	981.25	803.15	818.8
Research & development	46.32	45.55	50.47	36.95
Depreciation/amortisation	114.24	89.55	75.11	55.8

(continued)

Table 2 (continued)

	2015 (31/12)	2014 (31/12)	2013 (31/12)	2012 (31/12)
Interest expense (income), net operating	265.44	237.85	12.01	–
Unusual expenses (income)	–	–	–	–
Other operating expenses, total	6.86	70.89	7.06	26.75
Operating income	312.27	144.79	136.68	–99.75
Interest income (expense), net non-operating	–234.39	–16.25	–233.95	–45.16
Gain (loss) on sale of assets	–	–	–	–
Other, net	–3.71	–2.06	–5.57	–6.9
Net income before taxes	74.18	126.49	–102.84	–151.81
Provision for income taxes	5.6	22.37	–9.36	–27.81
Net income after taxes	68.58	104.12	–93.48	–123.99
Minority interest	–8.96	–6.75	–6.24	13.27
Equity in affiliates	–	–	–	–
US GAAP adjustment	–	–	–	–
Net income before extraordinary items	59.62	97.38	–99.72	–110.72
Total extraordinary items	–	–	–	–
Net income	59.62	97.38	–99.72	–110.72
Total adjustments to net income	–	–	–	–
Income available to common excluding extraordinary items	59.62	97.38	–99.72	–110.72
Dilution adjustment	–	–	–	–
Diluted net income	59.62	97.38	–99.72	–110.72
Diluted weighted average shares	335.46	335.46	335.46	335.46
Diluted EPS excluding extraordinary items	0.18	0.29	–0.3	–0.33
DPS—common stock primary issue	–	–	–	–
Diluted normalised EPS	0.18	0.29	–0.3	–0.33

Source Investing (2016); http://tr.investing.com/equities/vestel-income-statement
All data are given in millions of Turkish lira (except for per share items)
DPS Dividends per share, *EPS* Earnings per share, *GAAP* Generally accepted accounting principles

Conclusions

Not being able to go further than a certain point in terms of per capita income is called the middle-income trap. Generally, countries with a national income per capita of up to $2000 are qualified as low-income countries while countries between $2000 and $7500 are lower middle-income countries, those with an income $7500–11,250 are higher middle-income countries and counties with an income of $11,250 or more are high-income countries. Turkey, and other middle-income countries in Europe, should put structural reforms into effect in order to move out of this range; in particular, Turkey should increase its income by $1500 per year, execute reforms that raise educational quality, growth should be based on capital accumulation and job creation, the increase in per capita income should reach 5%, a model of production involving local content is needed, a new model of development is required, the informal economy should be challenged, advanced democracy is needed, the export share of high technology should be increased, long-term targets should be the sources of motivation and a productive economic structure should be preferred. It is possible for countries that take these points into consideration to move rapidly away from the middle-income trap.

The reason for the middle-income trap appearing can be summarised as follows. At the beginning of the growth process middle-income countries compete with the advantage of a low labour cost in the production of goods that a number of countries can produce and which do not require a high skill level. Sectors such as textiles, ceramics and iron/steel are among those in which the middle-income countries compete. With the income rise depending on growth, the production cost increases over time and the market for these products is lost to the countries that produce the same products with a similar quality and characteristic but lower cost. Economic growth is sustainable only by means of products that require higher skills and knowledge and that are produced by fewer countries. Sophisticated chemical products, information technology products and machines in particular are included among these. Competition in the aforementioned products is possible not by the cost advantage that advanced countries have already lost, but by increasing the quality and producing new products. However, to

produce these products countries should first of all move to the rank of 'developed countries'. This transition is not possible without boosting labour skills and the educational level, reinforcing 'human capital', and making steps such as the incorporation of existing knowledge but also the skill of being able to create new knowledge—constituting knowledge capital. Taiwan, South Korea, Singapore and Hong Kong were listed in the middle-income countries in the last quarter of the twentieth century but surpassed the middle-income trap and reached the rank of developed countries as a result of the investment that they made in human and knowledge capital. Brazil, which was at the same level in the 1970s, was not able to manage this breakthrough, could not rise to a high income level and got stuck in the trap.

It cannot yet be known whether Turkey is stuck in the middle-income growth trap. Turkey is currently making headlines for transitioning to the knowledge society by the means of plans for a 'national innovation system'. By advancing in this direction, Turkey will have access to significant knowledge and a skill production structure and human capital that will enable it to join the countries featuring "very high human development" (Ercan 2014, p. 1).

It is crucial for the middle-income European countries to maximise their quality to attract investors in order to have the possibility of increasing their financial performance. Constituting foreign capital strategies, carrying out country SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses by impartial parties, an appropriate determination of the ways and methods to be used for the promotion of the country and an effective way to create a strategy for investment promotion, bringing low-price product strategies to the forefront in the frame of liberalisation, drift to new technologies in conjunction with productivity growth, avoiding political uncertainty and confusion, the use of investment agencies for foreign investors, strengthening the points that increase regional competitiveness, making laws protecting investors' rights, and constituting investment infrastructures as well as applying standards determining the investor's minimum requirements are the issues that constitute the course of action to generate investors' interest.

References

Akal, Z. (2005). *Performance measurement and control in businesses, versatile performance indicator*. Ankara: MPM Publishing.

Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation, 28*(10), 644–657.

Auken, H. V., Madrid, A. G., & Domingo, G. P. (2008). Innovation and performance in Spanish manufacturing SMEs. *International Journal of Entrepreneurship and Innovation Management, 8*(3), 36–56.

Arçelik Annual Sustainability Report Arçelik. (2014). http://www.arcelikas.com/UserFiles/file/Surdurulebilirlik%20Raporu%202014%20Yeni.pdf.

Avcı, U. (2005). A survey on financial and non-financial performance measurement in hospitality industry. *Journal of Travel & Hotel Management,* 11–15.

Barutçugil, İ. (2002). *Performance Management*. Istanbul: Kariyer Publishing.

Becheikh, N., Landry, R., & Amara, N. (2006). Lessons from innovation empirical studies in the manufacturing sector: A systematic review of the literature from 1993–2003. *Technovation, 26*(5), 644–664.

Buijs, J. (2003). *Modelling product innovation processes, from linear logic to circular chaos creativity and innovation management* (pp. 76–93). Cambridge: Blackwell Publishing Ltd.

Demirel, S. (2007). *Performance management in educational organizations and an implementation of Tavşanlı Anatolian High School*. Kütahya.

Dikmen, F. C. (2007). Measuring the effectiveness of universities with data envelopment analysis. *Journal of Faculty of Economics and Administrative Sciences*, 3–6. Kocaeli, MA: Kocaeli University.

Elçi, Ş. (2005). *Innovation development and competition key*. Ankara: Meteksan and BT Newspaper Publishing.

Elçi, Ş. (2006). *Innovation development and competition key*. Istanbul: Pelin Publishing.

Ercan, M. (2014). *Human development and medium income growth trap*. Istanbul: Radikal Newspaper.

Erşangur, C. (2003). *Increase performance of employees in business and the importance of managing participation in evaluating their performance and an application in Nigde Industry Enterprises*. Nigde.

Folan, P., Browne, J., & Jagdev, H. (2007). Performance: Its meaning and content for today's business research. *Computers in Industry, 58*(7), 605–620.

Gül, Z. (2012). *Impacts of entrepreneurial contributions of businessmen organizations in Turkey on entrepreneurship and innovation performances*. Kahramanmaraş.

Investing. (2016). http://tr.investing.com/equities/vestel-income-statement.

Iraz, R. (2005). *Entrepreneurship and SMEs in the context of creativity and innovation*. Konya: Çizgi Bookstore.

Koçel, T. (2010). *Business administration*. İstanbul: Beta Publishing.

Kılınç, İ. et al. (2008). A research on the applicability of balanced measurement card in four and five star hotel establishments in Alanya. *Journal of Social Sciences,* 157–175.

Özkaya, S. (2013). *Performance management and performance management in the public sector*. Ankara.

Rothwell, R. (1994). Towards the fifth-generation process innovation. *International Marketing Review, 11*(1), 7–31.

Southern, G. (1999). A systems approach to performance measurement in hospitality. *International Journal of Contemporary Hospitality Management, 11*(7), 366–376.

Tidd, J., Bessant, J., & Pavitt, K. (2005). *Managing innovation*. NY: Wiley.

Vestel Annual Report. (2015). http://www.vestelyatirimciiliskileri.com/_assets/pdf/faliyet/2015/faaliyet-raporu-2015.pdf.

Wolfe, R. A. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of Management Studies, 31*(3), 405–431.

Zerenler, M., Türker, N., & Esen, Ş. (2007). Global technology, research-development and innovation relation. *Journal of Social Sciences Institute*, 653–667.

Zhang, M. J. (2011). Firm-level performance impact of IS support for product innovation. *European Journal of Innovation Management, 14*(1), 118–132.

SWOT Analysis of the Turkish Economy in the Context of Innovation from the Perspective of the Business World, Academics and Government Executives: A Comparative Analysis of Middle-Income Countries in Terms of Their Innovation Capacities

Sedat Murat, Kadir Tuna and Volkan Hacıoğlu

Goal and Scope

A groundbreaking brainstorming workshop with a theme of the "Innovative Capacity of Turkey" was conducted in 2013 during a preparatory workshop for the Second World Conference on Technology, Innovation, and Entrepreneurship which is due to be held in 2017. The invaluable opinions of roughly 200 reputable business people, academics and government executives, who registered without any kind of

S. Murat (✉) · K. Tuna · V. Hacıoğlu
Faculty of Economics, Istanbul University, Istanbul, Turkey
e-mail: murats@istanbul.edu.tr

K. Tuna
e-mail: kt1905@gmail.com

V. Hacıoğlu
e-mail: volkan_hacioglu@yahoo.com

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1_11

pre-assessment, were collected and evaluated in accordance with SWOT analysis, whereby all of the collated ideas were identified under the SWOT categories of Opportunities, Threats, Strengths, and Weaknesses.

In the workshop, as the Young Executives and Businessmen Association (GİAD) stands to be one of the most prominent participants, the members of aforesaid association's governing board and general meeting have become the delegate-at-large of the brainstorming. The other delegates of the brainstorming included speechmakers and faculty members from both within Turkey and abroad. In addition, there were also outstanding foreign faculty members and private sector executives from both the European Union (EU) and USA. Government executives and the representatives of non-governmental organisations (NGOs) also participated in the brainstorming.

In brief, the scope of brainstorming is focused on a SWOT analysis of the Turkish economy in the context of national innovative capacity. Most importantly, the analysis aims to extract and ascertain the intrinsic innovative capacity of Turkey in the view of the business world, NGOs, government executives and academics.

In this chapter, we also make comparison between middle-income countries, of which Turkey is one, because significant growth has occurred in these middle-income countries as well as countries of higher middle income. Factors of relatively cheap labour and raw materials will to growth, entrepreneurship induced rising economies to become phenomenon.

The average growth that has occurred in China, Brazil, India, Hong Kong, Iran, Indonesia, Russia and Turkey has been much greater than that of developed countries. China in particular has become a locomotive in the global economy. However, in recent years because of structural reforms that have not been undertaken in the areas of technology and innovation, abolishment of quantitative improvement paved the way for a loss of acceleration of growth rates. Interest rates have also risen in the USA and the lingering probability of that rising trend remaining in the future caused hot money and funds to become unavailable due to market panic.

The search for a way out of the middle-income trap via new technology and innovation policies is needed in middle-income countries

generally and rising economies particularly through implementation of structural reforms on secondary education, higher education, financial discipline and the judicial system. To this end, in this chapter we analyse the innovation policies in countries including Turkey and a comparison is made between middle-income countries.

In this chapter, we first explain the methodology of the SWOT analysis in Section "Methodology". The outcomes of brainstorming are discussed in detail as Opportunities, Threats, Strengths and Weaknesses in Section "Outcomes of Brainstorming". In Section The Innovation Policies Required in Middle-Income Countries, Rising Economies and Turkeyto Exit the Middle-Income Trap: A TotalAppraisal of Middle-Income Countries, the required innovation policies in middle-income countries are analysed together with rising economies and Turkey's exit from the middle-income trap as a total appraisal of middle-income countries. Finally, Section "Conclusion" concludes the chapter with policy recommendations and practical considerations for future economic causes, consequences of the middle-income trap and remedies for it.

Methodology

The SWOT analysis conducted through brainstorming about the Turkish economy has been chosen as a methodology to assess the "Innovative Capacity of Turkey". The brainstorming process is implemented in two distinct phases. First, the opinions collected through the brainstorming are identified under the categories of Opportunities, Threats, Strengths and Weaknesses. Within these four categories, the opinions are then prioritised. For each of the SWOT items, the first ten opinions are assigned a priority with respect to the weighted arithmetic mean.

Outcomes of Brainstorming

All of the ideas gathered during the brainstorming were compiled and then classified under the SWOT elements of Opportunities, Threats, Strengths and Weaknesses.

Identification of Opportunities and Threats

Given the outcomes of brainstorming, the Opportunities and Threats related to the innovative capacity of Turkey are determined through a SWOT analysis of the Turkish economy as follows.

(i) **Opportunities**

- Embracing a long-term perspective
- Geographical position
- Globalisation
- Turkey is the greatest secular country in the Middle East
- Higher commercialisation rate of scientific research in Turkey
- Turkey's potential to utilise its alternative energy resources
- 1.8 billion people in the Islamic world market
- Turkey's nomination for EU membership
- Lower investment costs in the software field
- Requirement to build a research and development (R&D) centre for foreign investors
- Higher potential in alternative tourism
- Immigration phenomenon in the long run
- Scripts of movies and television series are written in a way to support entrepreneurship.

(ii) **Threats**

- Higher dependency of exports on low-cost labour
- Plans of international pressure groups regarding Turkey
- Ranked 51st in the global competitiveness listing
- Unfair distribution of income
- Immigration phenomenon in the short run
- Inefficient use of social capital
- Decreasing population growth rate
- Current deficit based on energy expenditure
- Disappearing attribute of industry as the driving force of employment
- Shortage of executives and human resources who can fluently speak foreign languages

- Shortage of world brands emerging from Turkey
- Shortage of investments oriented to recycling
- Lack of social mobility with a vision
- Lack of progress in EU relations because of EU
- Failure of Turkish universities to open international campuses
- Lack of confidence, and incompetency of bureaucracy
- Over-investments in defence industry
- Globalisation
- Terror
- Media manipulation
- China threat
- Brain drain
- Suggestions from America, Europe and Russia about the technological development of Turkey
- Suppressed exports because of high domestic demand.

Identification of Strengths and Weaknesses

The brainstorming delegation has identified the Strengths and Weaknesses of Turkey's entrepreneurship centric innovative capacity as follows:

(i) **Strengths**

- An educated, young population
- A young population committed to globalisation
- Human resources capacity employed at an international level
- Experience gained in production and use of technology
- Pluralist cultural structure
- Young population with technological skills
- Higher demand for innovative products
- Digital agriculture
- Average growth rate of 4%
- Higher entrepreneurial skills
- Ingenuity to manage crises
- Education system and university campuses opened abroad

- Government grants for R&D expenditure
- Media sector
- Highly dynamic society
- Legendary successes of small- to medium-sized enterprises (SMEs)
- Conglomerates
- Guiding ability of baby boomers for next generations
- Being a part of the European territory of research
- Prosperity of Turkey's hinterland
- High rate of higher education
- Threats of key industries on subsidiary industries
- Turkish Air Lines globalising effect on Turkish entrepreneurs
- Agricultural sector
- Wetlands
- Developing heavy industry because of the urgent needs of armed forces.

(ii) **Weaknesses**

- Oligarchic structure of Turkish bureaucracy
- Lack of cooperation between universities and industry
- Shortage of collaboration
- Lack of reforms in the education system
- High rate of informally operating SMEs
- Concerns about the future
- Insufficient legal infrastructure
- Insufficient level of R&D expenditure
- Lower quality level of education
- Lack of patience
- Lack of awareness to recognise the difference between generating an idea and generating an innovative idea
- Issues related to international quality standards
- Lack of technology production, and insufficient private sector support for R&D projects
- Shortage of qualified graduates
- Shortage of transparency
- Over-funded construction sector
- Lack of a long-term view

- Insufficient foreign-language teaching
- Failure to follow-up incentives
- Failure of universities' efforts to be specialised as education and research universities
- Failure in the coordination of universities, industry and NGOs
- Aptitude tests of undergraduates are performed at the beginning of the educational process
- Failure of SMEs to adapt to Industry 4.0
- Lack of sensitivity to culture and art
- Desire to make money instead of gain success
- Unemployment spread among young population
- Lack of coordination
- Insufficient personnel with a graduate diploma in industry
- Failure to use research allowances
- Lack of creative education
- Lack of R&D funds management
- Insufficient number of techno-entrepreneurs
- Lack of self-confidence
- Lack of project preparation
- Agriculture
- Clustering in agriculture
- Diminishing interest in fundamental sciences
- Lack of strategic plan as well as vision
- Conflicting R&D activities with the realities of Turkey in universities
- Aging population
- Conflict between generations X and Y
- Problems in financial structure
- Failure to protect patent rights
- Highly strict regulations on logistics, energy and health
- Failure of Turkish entrepreneurs to introduce themselves at an international level
- Absence of infrastructure for the development of entrepreneurship culture
- Lack of socio park model
- Ranked 58th in the global innovativeness listing

- Insufficient rate of female labour force participation
- Absence of educational infrastructure for wunderkinds
- Insufficient number of executives and personnel who can fluently speak foreign languages
- Lack of angel investors
- Absence of entrepreneurship in education
- The problem of commercialisation experienced in TÜBİTAK-supported innovations
- Abundant ideas, but scarce analyses
- Foundation of universities focused only R&D
- R&D expenditures cut as a first measure when budgets are cut
- Government is the biggest employer
- Insufficient ethical values
- Failure to reconstruct KOSGEB (the Small and Medium Size Enterprises Development Organization)
- Lack of lifelong learning motivation
- Lower level of financial literacy
- Reestablishment of research universities needed in mega cities
- Foreigner mania experienced in service procurement
- Lack of R&D projects in public–private sector cooperation
- Failure to differentiate between innovation and product development
- Failure of second generations in family firms
- Lack of examples of branded Turkish entrepreneurs in text books
- Lack of aggressive competition style in the behaviour of Turkish business people
- Lower level of utilisation of publications
- Scarcity of woman executives
- Tendency to large scale in entrepreneurship
- Lack of environmental entrepreneurship.

Prioritisation of Opportunities and Threats

The Opportunities and Threats determined during the innovative capacity-centric brainstorming were presented to the participants in a

survey form with a space denoting a prioritisation scale—from 1 to 5—left blank beside each idea. The scale used to rate the ideas expressed in the SWOT analysis is as follows: (1) least important idea; (2) less important idea; (3) important idea; (4) very important idea; and (5) most important idea.

Ideas are then prioritised by calculating their weighted averages with respect to the frequencies and significance levels of opinions. According to the outcomes of survey forms filled in by participants, the top ten Opportunities and Threats are as follows.

(i) **Priority Opportunities**

1. Embracing a long-term perspective
2. Geographical position
3. Globalisation
4. Turkey is the biggest secular country in Middle East
5. Commercialisation rate of scientific breakthroughs in Turkey
6. Turkey's potential to utilise its alternative energy resources
7. 1.8 billion people in the Islamic world market
8. Turkey's nomination to EU membership
9. Lower investment costs in the software field
10. Requirement for foreign investors to build an R&D centre

(ii) **Priority Threats**

1. Higher dependency of export on low-cost labour
2. Plans of international pressure groups regarding Turkey
3. Ranking 51st in the global competitiveness listing
4. Unfair distribution of income
5. Immigration phenomenon in the short run
6. Lack of social mobility with a vision
7. Inefficient use of social capital
8. Diminishing population growth rate
9. Current deficit based on energy expenditure
10. Terror

Among the primary threats, lower-technology export products are a problem for economic development.

Prioritisation of Strengths and Weaknesses

As for Opportunities and Threats, the Strengths and Weaknesses determined during the innovative capacity-centric brainstorming were presented to the participants in a survey form using the same rating scale. Then ideas are prioritised by calculating their weighted averages with respect to the frequencies and significance levels of ideas. According to the outcomes of survey forms filled in by participants, the top ten Strengths and Weaknesses are as follows.

(i) **Priority Strengths**

1. Educated, young population
2. Young population adaptable to globalism
3. Human resources capacity employed at an international level
4. Experience gained in production and use of technology
5. Pluralistic cultural structure
6. Young population with technological skills
7. Higher demand for innovative products
8. Digital agriculture
9. Average growth rate of 4%
10. Higher entrepreneurial skills

Having an educated, young population clearly comes to the front as an important advantage as well as having a young population in itself. The average growth rate of 3% prevailing for the last 15 years may be explained with a Demographic Window of Opportunity.

(ii) **Priority Weaknesses**

1. Lack of long-term view
2. Oligarchic structure of Turkish bureaucracy
3. Lack of cooperation between universities and industry
4. Lack of collaboration
5. Lack of reforms in the education system
6. High rate of informally operating SMEs
7. Concerns about the future

8. Insufficient legal infrastructure
9. Insufficient level of R&D expenditures in order to turn inventions into patents
10. Lower-quality level of education

The Innovation Policies Required in Middle-Income Countries, Rising Economies and Turkey to Exit the Middle-Income Trap: A Total Appraisal of Middle-Income Countries

As stated at the High-Level Conference of Middle Income Countries (2013), middle-income countries produce 30% of the world's economic value-added, but 70% of the world population lives in these countries.

Before we go into detail, let us explain the income classification system of the World Bank for the 2017 financial year using the Atlas Method according to per capita gross national income (GNI) (World Bank 2017):

- *Definition of lower-income countries*: those countries with lower than $1025 per capita GNI;
- *Definition of middle-income countries*: those countries with between $1026 and $4035 per capita GNI;
- *Definition of higher middle-income countries*: those countries with between $4036 and $12,475 per capita GNI;
- *Definition of higher-income countries*: those countries with more than $12,475 per capita GNI.

In 2010, according to World Bank data, 40 countries out of 124 were categorised as low income, 52 countries as middle income and 32 as high income.

In their working paper analysing the middle-income trap, Felipe et al. (2012) classified income groups using per capita gross domestic product (GDP) according to purchasing power parity (PPP), as follows:

- *Definition of low-income countries*: those countries with lower than $2000 per capita GDP;
- *Definition of middle-income countries*: those countries with between $2000 and $7250 per capita GDP;
- *Definition of higher middle-income countries*: those countries with between $7250 and $11,750 per capita GDP;
- *Definition of higher-income countries*: those countries with more than $11,750 per capita GDP.

There are different opinions in the literature regarding the concept of middle income and how long it takes for a country to be classified as stuck in the middle-income trap. Spence (2011) in his analysis—though not using the concept of middle income as such—asserted that periods during which a country's GNP falls between $5000 and $10,000 should be taken as the basis for determination of the transition to middle income.

Over the past 20 years, middle-income countries have achieved significant growth rates. Figure 1 shows the per capita GDP and growth rates of rising economies.

Figure 1 shows the distribution of income groups between world countries over a 60-year period from 1950 to 2010. Beginning from 1950, the share of lower-income countries gradually decreased in the income groups of world countries; 37 countries stayed in the low-income trap between 1950 and 2010 (Felipe et al. 2012).

Among the countries that were in the lower middle-income group in 1950 and then moved up to the upper middle-income group, China transitioned from low-income group to the lower middle-income group in 1992, and from the lower middle-income group to the upper middle-income group in 2009.

The Chinese economy going into an explicit slowdown in recent years shows a tendency towards the middle-income trap. The comparative advantage of the Chinese economy in labour-intensive production sectors has weakened because of an aging population and rising labour force costs. Though China continues to improve its competitive capacity in information and technology-intense industry sectors, it is debated

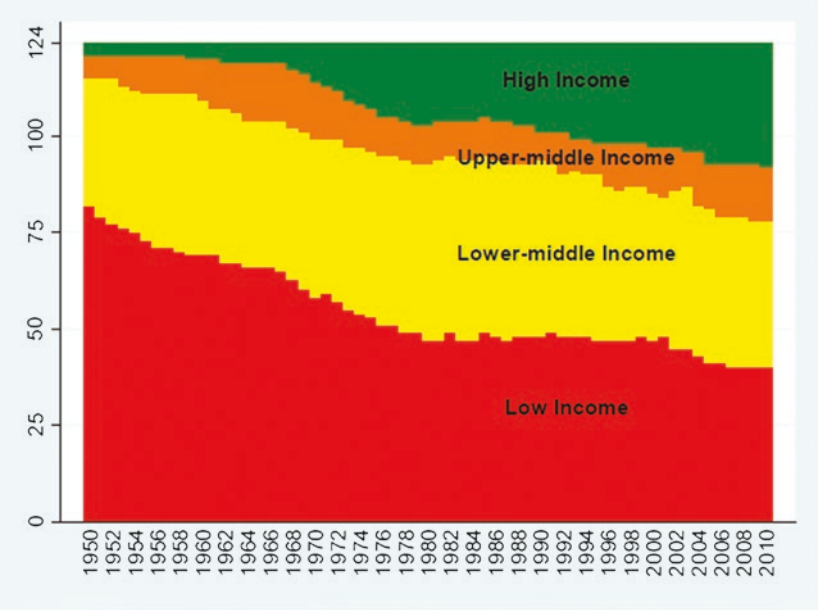

Fig. 1 Distribution of income groups between world countries (1950–2010) (*Source* Felipe et al. 2012)

whether China is one of the countries likely to fall into the middle-income trap in the near future (Agenor 2016).

Turkey, on the other hand, transitioned from the low-income group to the lower middle-income group for the first time in 1953, but in 1954 moved back again to the low-income group. In 1955, Turkey transitioned once again to the lower middle-income group and in 2005 moved up to the upper middle-income group.

According to Agenor (2016), among the reasons for a country's economy falling into the middle-income trap are decreasing returns to physical capital, cheap labour, exhaustion of imitated production, deficiencies in the quality of human capital, distorted incentives, misallocation of talents, insufficient access to advanced infrastructure, problems acquire finance resources and income inequality.

Structural transformations to escape the middle-income trap are also listed, as follows: improving the quality of education, subsidies for

innovation activities in the economy, protection of property rights, supporting advanced infrastructure investments and clearing up hindrances to financial resources (Agenor 2016).

Table 1 shows the years in which countries transitioned from the low-income group to the middle-income group and from the lower middle-income group to the upper-income group successively, and their relative growth rates within the periods of transition.

Quantitative improvement, stagnation in developed and high-income countries, historical stagnation of Japan and high interest rates in middle-income countries also had an effect on these growth rates.

In middle-income countries and rising economies, the desire for a high level of growth, reformed entrepreneurship culture, development of the private sector and rise in exports cannot be ignored. However, it is unfortunately not possible to keep up the same rate and quality as in the rise from a low-income to middle-income level.

As is clear from Table 1, it is possible to move from low income to middle income with high motivation and hot money, but it is not possible to move from middle income to high income only with financial measures and motivation. Within this framework, in middle-income countries, structural reforms, and innovative entrepreneurship Innovative Entrepreneurship in general, and a new growth and development story based on innovativeness and technology improvement in particular are wanted.

Reinforcement of technical training in secondary education and carrying this on with applied practice in universities are required solutions. Transition from entrepreneurship to qualified entrepreneurship also needs to be bolstered.

In particular, the export of high-tech products is to be induced. For example, export rates of high-tech production economies, particularly in Turkey and generally in rising economies, are between 1 and 5%. Mostly, middle–high and low-technology products are exported. The export rates of high-tech products in general should be a minimum of 10–20%.

R&D incentives should be worked on rather than investment incentives, and innovation and technology productions should be promoted. In terms of cost and benefit analysis or the risk–reward nexus described

Table 1 Distribution of income groups between countries (1950–2010)

Country	Region	Transition year from low-income group to lower middle-income group	Transition year from lower middle-income group to upper middle-income group	Number of years spent in lower middle-income group	Growth rate of GDP in the transition period from lower middle-income group to upper middle-income group
China	Asia	1992	2009	17	7.5
Malaysia	Asia	1969	1996	27	5.1
Republic of Korea	Asia	1969	1988	19	7.2
Taipei, China	Asia	1967	1986	19	7.0
Thailand	Asia	1976	2004	28	4.7
Bulgaria	Europe	1953	2006	53	2.5
Turkey	Europe	1955	2005	50	2.6
Costa Rica	Latin America	1952	2006	54	2.4
Oman	Middle East	1968	2001	33	2.7

Source Felipe et al. (2012)
GDP gross domestic product

by Lazonick and Mazzucato (2012, pp. 22–23), policy implications suggest the following:

- Improve resource allocation by curtailing or totally banning manipulation and destabilising speculation on stock markets so that resources are channelled to those economic actors who seek risk for innovative entrepreneurship.
- Levying low tax rates encourages innovative spirit and promote economic development.
- Rewarding the division of labour in innovative production helps entrepreneurs attain competitive advantage and prevent unfair competition.
- Distinguishing between productive and unproductive risk makes innovative entrepreneurs' investments profitable and their ventures become successful.
- By arrangement, the state keeps a 'golden share' of the returns on patents and copyrights after disposition of the risk.

The intellectual economy, in which information technologies, arts, higher education and the qualified service industry take part, should be improved. The same 'recipe' is valid for all middle-income countries. This point is heavily stressed in the SWOT analysis of the innovative capacity of Turkey conducted involving managers and academics. Structural reforms in general and innovative reforms in particular are a part of all government programmes of rising economies, though they are not appropriately applied.

Conclusion

The SWOT analysis based on a brainstorming conducted amongst representatives of NGOs, the business world and the academic sphere reveals numerous intriguing results. Sometimes, objective outcomes are observed, while at other times there are some total contradictions. For instance, a long-term view is prioritised as an opportunity, while also being prioritised as a threat and a weakness.

Geographical position is undeniably considered as an opportunity by all segments. In addition, the potential of alternative energy resources is also evaluated as an opportunity. In the same manner, both the potential of alternative tourism and the requirement for foreign investors to build an R&D centre are also seen as an opportunity.

Despite the opportunities identified, many factors such as terror, exportation of cost-efficient products, immigration and unfair distribution of income are prioritised and then defined as a threat.

Among the strengths are a well-educated young population, an ambitious tendency and adequate capacity to integrate with the global world, as well as a qualified labour force, meaningful sensitivity to information technologies, higher entrepreneurship skills and authenticated experience with crises; while the prominent weaknesses are identified as a lack of reforms in the education system, suspension of innovative reforms, oligarchic bureaucracy and the black economy.

In conclusion, there is no need for despair regarding having an innovative and intellectual economy as long as shrewd answers are devised for a wide range of fundamental issues including innovative entrepreneurship and stewardship, and reform steps mandatory for an intellectual economy. However, having an economy with innovative capabilities actually entails a 50- to 100-year strategic plan and a vision designed for beyond 2023.

References

Agenor, P. R. (2016). *Caught in the Middle? The Economics of Middle-Income Traps.* (Working Paper Series No. 142), Revised Version (May 2016). Fondation Pour Les Études et Recherches Sur le Développement International.

Felipe, J., A. Abdon, and U. Kumar. 2012. *Tracking the Middle-Income Trap: What Is It, Who Is In It, and Why?* (Working Paper No. 715). Annandale-On-Hudson: Levy Economics Institute of Bard College.

High-level Conference of Middle-Income Countries on Challenges For Sustainable Development and International Cooperation in Middle-Income Countries: The Role of Networks for Prosperity, 12–14 June 2013. San José, Costa Rica.

Lazonick, W., & Mazzucato, M. (2012). *The Risk-Reward Nexus: Innovation, Finance and Inclusive Growth*. London: Policy Network Paper.

Spence, M. (2011). *The Next Convergence. The Future of Economic Growth in a Multispeed World*. New York: Farrar, Strausand Giroux.

World Bank. (2017). *World Bank Country and Lending Groups*. http://data.worldbank.org/about/country-classifications/a-short-history.

Index

S. Sener and S. Schepers (eds.), *Innovation, Governance and Entrepreneurship: How Do They Evolve in Middle Income Countries?*, DOI 10.1007/978-3-319-55926-1