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Master of Arts in Strategy and International Management

Master's Thesis

**Demography Meets Strategic Planning: The Rationale Behind a
Demographic Risk Indicator at Industry Level**

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My special thanks goes to Dr. Hans Groth whose work in the field of demography has been the inspiration for this master's thesis, conducted in collaboration with Francesco Bonafini, and whose support and guidance have been decisive in the creation of this paper.

Abstract

This master's thesis further develops the demographic risk indicator rationale introduced in a study published by Francesco Bonafini in November 2013. The purpose of this master's thesis is to examine the feasibility and the potential of a demographic risk indicator with company-level measurement and industry-level aggregation.

The demographic risk indicator is a proactive management tool that assesses the level of preparedness of Swiss companies to face population ageing. As a composite indicator, it measures the resilience of the company dimensions most affected by the megatrend. It offers companies a framework with easy-to-implement key performance indicators that helps identify, understand, and monitor the demographic pressures organizations face. Its industry-level aggregate provides business interest associations and the Swiss government with the information they need to promote evidence-based policies aimed at improving the competitiveness of Swiss framework conditions for the private sector.

Based on desk research, the demographic risk indicator is designed as a strategic foresight tool to play a primary role throughout the organizational strategic process. Its positioning as a composite indicator is examined and its differentiation and monetization potentials are assessed. The impending synergies of collaborating with business interest associations for the development, publication, and dissemination of the demographic risk indicator are revealed.

Expert interviews and an extensive survey provide empirical results that test the assumptions underlying the comprehensive demographic risk indicator rationale. Particular attention is focused on industry-level stakeholder needs and interests, already existing alternatives, as well as ways to maximize the impact of the tool.

Building on Francesco Bonafini's work, this master's thesis proposes a clear format and purpose for the demographic risk indicator, for which it identifies an existing market potential. It also provides recommendations on the next steps to be taken for its development.

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List of abbreviations

B2C	business to consumer
BIA	business interest association
DFX	Demographic Fitness Index
DRI	Demographic Risk Indicator
DRM	Demographic Risk Map
e.g.	exempli gratia (for example)
et al.	et alii (and others)
KPI	key performance indicator
MONET	Monitoring der Nachhaltigen Entwicklung (monitoring of sustainable development)
OECD	Organization for Economic Co-operation and Development
p.	page number
PISA	Programme for International Student Assessment
pp.	page numbers
SEA	Swiss Employers' Association
SFSO	Swiss Federal Statistical Office
SIM	Strategic Issue Management
SME	small and medium enterprise
WDA Forum	World Demographic and Ageing Forum
WEF	World Economic Forum

1. Introduction

“National competitiveness is defined by the World Economic Forum as a set of factors, policies, and institutions that determine the level of a country’s economic prosperity and productivity” (Tošović Stevanović, 2011, p.409). National competitiveness can therefore be understood as an aggregate of micro- and macro-level country-specific characteristics, whereas an improved alignment of those characteristics entails a more efficient use of national resources, thereby increasing national prosperity and productivity.

Population ageing is an irreversible megatrend which over the long-term has the potential to significantly impact Switzerland’s competitiveness at a company, industry¹, and national level. Indeed, while it creates a lucrative silver market with comparatively wealthy customers, it also directly threatens the productivity of the country’s main resource – human capital – by rendering it scarcer, more expensive, as well as more challenging to manage.

According to strategic foresight expert Richard Slaughter (1997), when faced with such a megatrend, adopting a proactive rather than a reactive stance reduces uncertainty and reveals the grounds of otherwise unavailable strategic options (p.14). This is what the strategic tool introduced in this master’s thesis - the demographic risk indicator (DRI) - aims to accomplish. The DRI is conceptualized as a three-layered strategic indicator targeted at company-, industry-, and national-level users. Its objective is to provide quantitative evidence with which the negative impacts of population ageing on Swiss competitiveness can be fought, especially in regards to ageism, the “discrimination against older employees and the neglect of the senior citizens as a market” (Uhlenberg, 2013, p.17).

1.1 Aim of the master’s thesis, framework, and research questions

This master’s thesis is the result of a collaboration with the World Demographic and Ageing Forum (WDA Forum) and its president, Dr. Hans Groth. It complements the work of another University of St. Gallen Strategy and International Management student, Francesco Bonafini, who handed in his master’s thesis “Demography meets Strategic Planning: Features of a Demographic Risk Indicator Tailored for Companies” on November 12, 2013. The present thesis therefore builds on Bonafini’s identified research gap which is the lack of indicators to assess the demographic competitiveness and manage the evolution of the population ageing megatrend in Switzerland.

While drawing on academic and expert literature, this master’s thesis is intended as a practical project aimed at establishing a business case for the DRI rather than building theory

¹ This master’s thesis uses the expressions “industry” and “economic sector” without distinction, whereas according to certain definitions, an economic sector may be larger and group several industries.

or contributing to the existing literature. If the resulting business case is deemed promising, the WDA Forum has the option to further develop the concept and publish the DRI.

By introducing the rationale behind the aggregation of a company-level DRI at an industry level, this master's thesis considerably expands Bonafini's previous work. Contributions about strategic foresight, composite indicators, and business interest associations add a further theoretical dimension to the already existing DRI framework. The enhanced DRI rationale is then presented to key stakeholders in order to test its perceived feasibility, usability, and legitimacy. As the present study focuses on Switzerland exclusively, the demographic change phenomenon reflected in the DRI is population ageing. In addition, the DRI focuses on demographic competitiveness of the Swiss private sector and does not address issues directly affecting the sustainability of public finances such as provisions for old age or health insurance coverage.

The aim of this thesis is to provide information about:

- the rationale behind a company-level DRI aggregated at an industry level,
- the key stakeholders' interest for population ageing and for a DRI at an industry level,
- the most appropriate format for an industry-level DRI,
- the most important dimensions to be included in an industry-level DRI,
- the monetization potential of a DRI at an industry level.

Due to its limited scope, this master's thesis will not provide technical information on how the DRI ought to be engineered, the definitive selection of dimensions that ought to be included in the DRI, or how those ought to be quantified.

1.2 Research approach

The research approach of this master's thesis is based on desk research, qualitative research and quantitative research. The former constitutes the theoretical part of the thesis and the two latter cover the practical portion.

In the theoretical part, secondary sources including Bonafini's master's thesis, academic and expert literature, and official statistics are used to develop the rationale behind the DRI. This section draws from the fields of demography, strategic management, future studies, statistics, and political sciences. Its aim is not to offer a complete overview of the existing body of knowledge, but rather to grant punctual insights into key notions of particular relevance to the DRI concept.

The practical portion of this master's thesis follows a mixed methods design involving qualitative and quantitative research components. The qualitative component includes five expert interviews with practitioners representing organizations particularly relevant to the industry-level DRI rationale. The interviews help fill the information gaps left open by the

secondary research and contribute to the finalization of the quantitative research design. This last component comprises an internet-mediated, self-administered questionnaire which was sent to the whole population of relevant Swiss sectorial business interest associations. The survey findings provide insightful information regarding the expected feasibility, usability, and potential of the company-level DRI with industry-level aggregation, as well as its key components.

1.3 Organization of the thesis

This master's thesis is organized as follows:

Chapter 2 reviews and comments upon the results of Bonafini's work on the company-level DRI rationale. Based on his results and supported by two underlying hypotheses, a holistic DRI rationale is introduced which will be supported by theoretical inputs in the three following chapters.

Chapter 3 takes on the strategic perspective and considers the usefulness of a DRI for overcoming organizational inertia and as a strategic foresight tool.

Chapter 4 introduces the potential format of the DRI by drawing on the balanced scorecard management approach and the academic and expert literature on composite indicators.

Chapter 5 analyses the Swiss business interest associations and argues that they have the potential to become key stakeholders in the creation and regular publication of the DRI.

Chapter 6 presents the design, execution, and results of the empirical research regarding the holistic DRI rationale specified in chapter 2 and supported by chapters 3 to 5.

Chapter 7 proposes the conclusion, limitations, and recommendations for the next steps to be taken to develop the DRI.

2. Defining the demographic risk indicator

As mentioned in section 1.1, this master's thesis is the result of a collaboration with another University of St. Gallen Strategy and International Management student, Francesco Bonafini, who handed in his master's thesis in November 2013. In his work, Bonafini proposed a theoretical rationale backed by empirical research for the development of a DRI at a company level. A significant amount of the basic DRI concept and structure was jointly developed by Bonafini and the author of the present master's thesis. Both theses benefited from the supervision of Professor Dr. Günter Müller-Stewens and Dr. Hans Groth.

This chapter is divided into three sections. The first section summarizes and comments on what the author perceives to be the key insights provided by Bonafini's work, so each can be broadened and complemented in the following chapters. This manner of proceeding renders a smooth transition between the two papers. The second section uses the insights gained in the previous subsections to formulate the DRI rationale, on which the primary and secondary research of the subsequent chapters is based. The third section discusses two key hypotheses, where the DRI's legitimacy and purposefulness rest.

2.1 A review of Bonafini's master's thesis

Bonafini's master's thesis focuses on the ageing population of Switzerland and its impact on local companies. Based on secondary research, he proposes a theoretical rationale for the development of a DRI on a company level. While he mentions the potential aggregation of the DRI at industry levels, he does not explain the reasoning behind this design and withholds additional specifications. Bonafini's primary research allows him to conclude that a new management tool such as the DRI could help fill a not yet satisfied need for quantitative information on the effects of demographic change for the long-term planning activities of organizations.

Bonafini uses the terms "demographic change" and "population ageing" interchangeably. According to the demographic transition theory, the demographic change induced by decreasing fertility and mortality rates in a delimited area inevitably results in population ageing for that region over the long-term (R. Lee, 2003). The non-exhaustive list of factors which may delay this process consists of mass-migration, pandemics, wars, and natural catastrophes, which usually result in the disappearance of a non-neglectable share of the region's adult population (Bongaarts & Bulatao, 2000, p.9). As Switzerland lies in the politically stable and otherwise safe region of Western Europe and has not been subject to the above-stated anomalies in its recent history, this master's thesis perceives population ageing to be the equivalent to demographic change and therefore uses the two terms interchangeably (Huber & Groth, 2013, p.1).

2.1.1 Demographic change

Bonafini establishes fertility, mortality, and international migration flows as the main drivers of demographic change for a region (May, 2012). It is the development of those three variables that influences the region's age composition and population size (Boehm, Kunisch, & Boppel, 2011). The demographic transition is a long-term phenomenon of global scale which is driven by the shift from high fertility and mortality rates to low degrees (R. Lee, 2003; May, 2012). During that process, national governments can take advantage of the drop in their total dependency ratio², also known as the demographic dividend, to boost their national output with the help of favorable economic and social policies (Kelley & Schmidt, 2005; *The Economist*, 2012, p.1). However, as the demographic transition continues its course, the old-age dependency ratio³ begins to increase, giving way to population ageing, which is expected to be the last stage of human demographic development (Hamm, Seitz, & Werding, 2008, p.10; R. Lee, 2003).

Population ageing is the inevitable long-term result of a fertility decrease combined with an increased longevity. It is often accompanied by the phenomenon of shrinking populations (Hamm et al., 2008; R. Lee, 2003; Perlitz, Schulze, & Wilke, 2010). The demographic transition timing differs between geographical regions across the globe, whereas it is developed nations which are the furthest advanced (United Nations, 2009). These nations are hence the first ones to learn how to manage the consequences of population ageing and to set best practices for other nations to follow (Thun, Gössler, & Miczka, 2007). On a macro-level, population ageing typically has a negative impact on the financial sustainability of public pension systems, healthcare schemes, and social services (Hou, 2011, p.70). However, it is the typically less scrutinized company-level implications of population ageing related to labor supply and product and service demand which Bonafini wishes to include in the DRI.

Switzerland, with a below replacement level fertility rate of barely above 1.5 children per woman⁴ and a world-class life expectancy of more than 80 years for both genders, is already heavily impacted by population ageing (Swiss Federal Statistical Office, 2012a, pp.6-8). In fact, in 2010, already 18 percent of workers were aged 55 or over, a percentage which is expected to increase by more than four percentage points until 2025 (Swiss Federal Statistical Office, 2012b, p.2).

² The total dependency ratio is the sum of the non-working age population aged below 15 or above 65 years divided by the sum of the working age population in between (R. Lee, 2003, p.182).

³ The old-age dependency ratio is the sum of the retired population aged 65 years and older divided by the sum of the working age population aged between 15 and 64 years (R. Lee, 2003, p.182).

⁴ Only at replacement level fertility rate, which rests around 2.07 for Switzerland, does a population remain constant in size and composition over time (Engelman & Leahy, 2006, pp.2-4; Hamm et al., 2008; May, 2012).

Comments

Bonafini (2013) highlights the fact that in the next 10 to 20 years, South East Asian countries will face the same changes induced by population ageing which Western European and North American countries are currently facing (p.6). However, in order to complete the list of population ageing trendsetters, one additional country cannot be omitted. Indeed, Japan is the country which is by far the most advanced in terms of population ageing and which therefore deserves special consideration when defining global best practices for handling the challenges brought forth by demographic change (Huber & Groth, 2013, p.1).

2.1.2 Megatrends in strategic management at a company level

Bonafini forms his understanding of strategic management on the definition of Nag, Hambrick, and Chen (2007) which delimits it as the field “that deals with the ... initiatives taken by general managers ... involving the utilization of resources to enhance the performance of firms in their external environments” (p.942). Of the two major subfields of strategic management, it is the one dealing with strategy-processes rather than strategy-content that is focused upon within his thesis, as it examines the question how firms form their strategies over time and hence studies the inclusion of trends into the long-term strategies of companies (Huff & Reger, 1987; Lechner & Müller-Stewens, 2000, p.1864; Lechner, 2005). Among the existing strategy formation processes, Bonafini focuses on strategic planning and its need for forward-looking information (Bonafini, 2013, pp.11-13; Patnaik, 2012, p.27).

Following Saritas and Smith (2011), Bonafini defines trends as broadly generalizable change factors of usually global reach, which cause long-term shifts in attitudes, policies, and business focuses that in most cases cannot be fought (p.294). The term megatrend was coined by Naisbitt (1982) and stands for a “big” trend (p.12) which typically lasts over many generations (Saritas & Smith, 2011, p.293). According to the academic and expert literature, population ageing is an unfolding megatrend which is expected to have a significant impact on companies (Boehm et al., 2011). In order to avoid strategic surprises from megatrends such as population ageing, organizations need to develop a peripheral vision which would enable them to sense unexpected changes even in areas that are not of present concentration (Day & Schoemaker, 2004). Once spotted, unexpected changes need to be analyzed and interpreted before the company can take action (Hiltunen, 2008). For that purpose, Bonafini offers a brief overview on the theory of strategic issue management and strategic foresight, which deal with the integration of megatrends and their long-term implications in the strategic planning of companies (Müller-Stewens, Mueller, Lüders, & Lu, 2012, p.65).

Comments

In the subsection about strategic foresight, Bonafini centers on the spotting of relevant environmental information and its inclusion into strategy-making. However, he does not investigate how strategic foresight contributes to the implementation and monitoring of the strategic measures addressing the identified trends. This stands in contrast to his research results which show that the DRI might be most useful as an implementation and monitoring tool for strategic initiatives addressing the effects of population ageing on companies (cf. subsection 2.1.6). As population ageing is a megatrend almost all Swiss companies are already aware of, there is no real need for an environmental scanning instrument to discover it and then place it on companies' maps of strategically relevant topics. For that reason, the third chapter of this master's thesis performs a more profound analysis of the strategic foresight field with a particular focus on its role for the implementation and monitoring of strategic measures and how it relates to the DRI.

2.1.3 Indicators

Bonafini opts for the definition of indicators proposed by Davis, Kingsbury, and Merry (2012) which he deems to be the most suitable for the DRI. According to them, an indicator is a named collection of ordinal data which offers a simplified representation of the past or projected performance of different units of analysis such as countries, institutions, or corporations. With the help of an indicator, those units of analysis can be compared and standards for benchmarking purposes can be agreed upon (pp.73-74). Based on the publications of Davis et al. (2012), Merry (2011), as well as Hák and Janoušková (2012), Bonafini identifies denomination, ordinal structure, simplification, evaluative purpose, and proposed objectivity as the five defining characteristics of socio-economic indicators.

Bonafini goes on to suggest that the role of indicators in organizations is to be a tool to monitor the implementation and to measure the effectiveness of the activities put in place to achieve corporate policies (Merry, 2011). They are essential for organizational decision-making processes because they link decision makers across different levels of influence and allow for an efficient use of information, data-driven decision-making, and benchmarking (Davis et al., 2012; Hák & Janoušková, 2012; van der Eerden & Saelens, 1991). Following Iasiello (2008), Bonafini suggests that the success of an indicator ought to be defined as its usefulness to its target audience, which depends on six criteria: transparency, audience fit, relevance, understandability, consistency, credibility, and legitimacy (Cash et al., 2002; Davis et al., 2012; Hák & Janoušková, 2012; Merry, 2011; Porter, 1996). Finally, the Work Ability Index, the Demographic Risk Map, and the Adecco Demographic Fitness Index, which are three already existing demographic indicators are introduced and evaluated.

Comments

Bonafini provides an encompassing analysis of indicator characteristics and success factors, but he fails to address some of their most relevant aspects for the DRI rationale. First and foremost, while he mentions the format of the DRI to be a composite indicator, he does not explain the reasoning behind that conception. Further, the prospective DRI is not thoroughly compared to the already existing demographic indicators, thereby leaving the question unanswered whether the DRI possesses a differentiation potential and therefore whether the research gap mentioned in the introductory chapter of his thesis really exists. Last, Bonafini does not address the question of how comparable indicators are financed that would help establish the monetization potential of the DRI. The fourth chapter of this master's thesis is therefore dedicated to filling in these knowledge gaps.

2.1.4 The rationale for developing a DRI at a company level

Bonafini (2013) ties the three chapters on demographic change, megatrends in strategic planning, and indicators together to establish the DRI rationale. He argues that thanks to its simplifying characteristic, an indicator appears to be the right tool to convey information about the complex effects of population ageing on the performance of companies. In order to ensure their competitiveness in the face of the challenges caused by population ageing, organizations ought to incorporate the DRI in their strategic planning activities as part of their strategic foresight process. Bonafini argues that companies could benefit from a DRI (i) to scan the environment and identify potential issues related to population ageing, (ii) to facilitate the interpretation of the identified issues, and (iii) to enable objective decision-making in the strategic foresight process.

Based on his analysis of the three selected existing demographic indicators, Bonafini suggests four potential content themes for the DRI: (i) the present and forecasted age structures of industries and companies, (ii) the workforce availability and characteristics of industries and companies, (iii) demographic projections for the target markets, (iv) the monitoring of the state of implementation of different initiatives intended to manage demographic change within companies (pp.28-29).

Comments

Bonafini enumerates the possible domains of use and potential themes for a company-level DRI, but he refrains from making specific recommendations regarding its purpose, format, and content. His inability to narrow down his selection to a single option stems from the bottom-up structure of his master's thesis. Even though he adopts a funnel-shaped research approach, it is not selective enough for its results to be conclusive. His main contributions therefore are the background research on which the DRI rationale rests and the assessment of possible themes to be included in the company-level DRI. In contrast, the present thesis adopts a top-down structure in order to deliver a clearer picture of what the purpose, format,

and content of the DRI ought to be. Based on Bonafini's preliminary research, a holistic DRI rationale is formulated in section 2.2. This rationale and its underlying hypotheses are then supplemented and tested with primary and secondary research throughout the following chapters.

2.1.5 Ageing population and strategic planning at a company level

The implications of the population ageing megatrend can be observed on (i) the social and economic dimension, (ii) the dimension related to labor supply and management leadership, and (iii) the dimension related to the offer and demand of products and services (Boehm et al., 2011, p.14). As the first dimension mirrors a mainly macro-economic perspective usually adopted by the government, Bonafini decides to focus on the second and third dimensions which have a more direct impact on companies. By combining the frameworks proposed by Boehm et al. (2011, pp.11-12) and Huber and Groth (2013), Bonafini (2013) first identifies six challenges which are linked to the second dimension: (i) shrinking labor supply, (ii) ageing workforce, (iii) increasingly age-diverse workforce, (iv) retirement and knowledge retention, (v) feminization of workforce, and (vi) international migration of workforce. He goes on to identify two additional challenges linked to the third dimension: (i) innovation and product development, and (ii) marketing and distribution (pp.30-42).

Comments

Bonafini provides a solid overview of the main challenges caused by population ageing at a company level. However, no concrete suggestions are provided concerning the means and degree of inclusion of single dimensions into the DRI construct. While the present master's thesis will make specific recommendations regarding the purpose, format, and content of the DRI (cf. subsection 2.1.4 and 6.3.3 as well as section 7.1), it will not go into technical subtleties either (cf. section 1.1).

By leaving out the lack of appreciation shown to older employees, Bonafini omits an important dimension of labor supply and management leadership challenges linked to ii) an ageing workforce and iii) an increasingly age-diverse workforce. Indeed, this dimension is highly relevant as the lack of recognition experienced by older employees is positively correlated with their early retirement plans (Thorsen et al., 2012). This lack of recognition is often the result of ageism, which has been coined by Butler (1975) as the "systematic stereotyping of and discrimination against older people because they are old, just as racism and sexism accomplished this with skin color and gender" (p.12). Typical stereotypes conveyed by ageism are the myths that age is a reliable predictor of performance and that age and performance are negatively correlated (Dennis & Thomas, 2007, p.85). The negative effects of ageism on the situation of older people within the economy and in society therefore ought to become one of the main messages conveyed by the DRI.

2.1.6 Empirical research

Bonafini (2013) conducts empirical research in order to examine the feasibility and potential format of a DRI tailored to company-level needs in Switzerland (p.43). He uses a mixed methods research design of which the qualitative portion comprises interviews with four experts in the fields of demographic change, population ageing, and strategic planning. There is a general agreement among the experts that most companies across the different Swiss industries are aware of the population ageing megatrend and perceive this megatrend to be relevant as illustrated by the fact that many of them have already started to take measures to address its effects within their organizations.

When addressing the population ageing megatrend, Swiss companies tend to prioritize their efforts around human resources issues, with an increased focus on the topics of labor supply, ageing workforce, and knowledge retention. However, they often lack coherent and holistic concepts on how to address demographic change that go beyond individual initiatives and often uncoordinated projects. The experts also reported that it is often quite challenging for companies to monitor and evaluate the effectiveness of the initiatives they implement. Therefore, the project of an industry-level DRI based on company-level measurements is judged unique and promising by the interviewed experts (Bonafini, 2013, pp.47-49).

The quantitative part of Bonafini's primary research takes the shape of an online self-administered questionnaire. The 13 questionnaires on which his conclusions are based were established upon a cross-industry sample of Swiss executives. According to the results of the survey, Swiss executives show a high level of awareness on the issue of population ageing, which they perceive to be the key sustainability driver for their companies in the long-term. However, almost half of them indicate that demographic change does not yet play a noteworthy role in their strategic planning activities.

On average, the respondents seem more confident in the fact that they have sufficient information to plan the required strategic initiatives than in the fact that they are able to measure the degree of their firm's preparedness for the realities of an ageing population. Accordingly, they appear to agree the most with the statement that monitoring the implementation and impact of population ageing-related initiatives is difficult. When asked whether their company would allocate resources to dispose over an industry-specific DRI, 46 percent of the respondents answered favorably. Whereas when asked whether the company would be available to participate in periodic surveys to collect data for the creation of the DRI, only 39 percent answered favorably (Bonafini, 2013, pp.50-51).

Comments

As mentioned by Bonafini (2013) in the section on the limitations of his study, the small sample size of the respondents to the survey does not allow for maximum validity, reliability, and generalizability of his findings (p.54). Nonetheless, even without being statistically

representative, the results of the qualitative and quantitative research both support the DRI potential, which is why the present master's thesis has been written.

2.1.7 Conclusion

The most conclusive insight provided by Bonafini is that companies do not yet have a standardized, comprehensive, and quantitative approach when addressing the challenges caused by population ageing as part of their long-term strategic planning activities. The DRI therefore has the opportunity to be designed to fulfill this untended company need. Even though he insists on the demand for an indicator consisting of demographic forecasts around industry customers, Bonafini agrees that due to the complexity and fragmentation of company needs in that field, it is more feasible to opt for a variant aimed at assessing the company and industry risk with a focus on labor supply and ageing workforce. Bonafini (2013) therefore proposes a DRI which "could assess industry and company-specific risk by collecting data at a company level with periodic surveys concerning age structure and state of implementation of different strategic initiatives, and condense them into industry measures" (p.53). According to Bonafini (2013), this indicator should include projections for the future labor supply. A DRI built around this design could serve as a valuable benchmarking tool to support decision-making. Additionally, it could function as a stimulator for firms to analyze their age structure and a monitoring tool to observe the results achieved through the implementation of relevant strategic initiatives (pp.52-53).

Comments

The author of this thesis agrees with Bonafini's conclusion regarding the high potential of a DRI based on company-level measurements and industry-level aggregation. However, Bonafini should have put more emphasis on his research results which show that in order to address a company need and differentiate itself, the DRI ought to become a comprehensive one-stop solution to help companies manage all their population ageing-related challenges, without subjectively prioritizing some dimensions over others.

There are also valid reasons for the DRI to be based solely on data collected amongst participating companies instead of aggregating publicly available statistics and customizing them with a new tool, as is the case with most other demographic indicators. This design would not only increase the differentiating potential of the DRI (cf. subsection 6.2.3), but also help avoid turning it into a market forecast provider. This would be beneficial as the DRI forecasts would inevitably turn out to be inaccurate (cf. subsection 3.2.2), and may not suffice to address the heterogeneity in terms of target markets and customer groups that can be found amongst different Swiss companies.

Indeed, a recent study published by the KOF Swiss Economic Institute suggests that in Switzerland, 32 percent of small companies, 50 percent of medium companies, and 60

percent of large companies export their products abroad (Arvanitis, Hollenstein, Ley, & Stucki, 2011, p.24), whereas according to Baldegger (2013), small and medium export enterprises (SMEs) earn on average more than 55 percent of their turnover abroad (p.13). When faced with these statistics, it becomes obvious that a DRI offering forecasts for only the Swiss market would be insufficient for a vast number of Swiss companies. Alternatively, addressing all the export markets and target customer groups of every Swiss company would be too complex. While Bonafini agrees with this logic when it comes to customer forecasts, but not for labor supply projections, the present author argues that the same reasoning applies to labor supply projections, as employees can be sourced internationally as well.

2.2 The resulting DRI rationale

“If you want to change how people think, give them a tool, the use of which, will lead them to think differently” (Fuller, 1981, p.101).

Based on Bonafini’s work, the following rationale for a DRI with a company-level measurement and industry-level aggregation emerges, which accounts for the comments made throughout the first section of this chapter and introduces the logic behind a higher-level aggregation of the company-level DRI.

A strategic tool for company managers

The DRI assesses the level of preparedness of Swiss companies to face population ageing. As a composite indicator, it measures the resilience of the company dimensions most affected by population ageing. The DRI emphasizes the eight challenges of shrinking labor supply, ageing workforce, increasingly age-diverse workforce, retirement and knowledge retention, feminization of workforce, international migration of workforce, innovation and product development, and marketing and distribution. It offers companies a framework with easy-to-implement key performance indicators that help identify, understand, and monitor the demographic pressures their organizations face. In addition, the DRI allows them to measure the efficiency of their strategic initiatives aimed at increasing their organization’s resilience to the effects of population ageing.

A yearly publication in collaboration with business interest associations

The Swiss sectorial business interest associations collect the DRI data from their members by means of a confidential online survey. The survey results are evaluated and published once a year by an independent organization. The business interest associations add the DRI to the list of exclusive services they offer to their members and finance it with their membership fee revenues. The DRIs of individual companies are treated confidentially and are only made available to the companies themselves.

Industry- and national-level aggregations with leverage potential

As individual companies usually lack the required resources and influence to induce structural change on their own, such shifts should be prompted by stakeholders at industry and national levels. The DRI will therefore provide those stakeholders with a tool for evidence-based policy making that aggregates not only company-level DRIs at industry levels for each economic sector, but also at a national level for the economy as a whole.

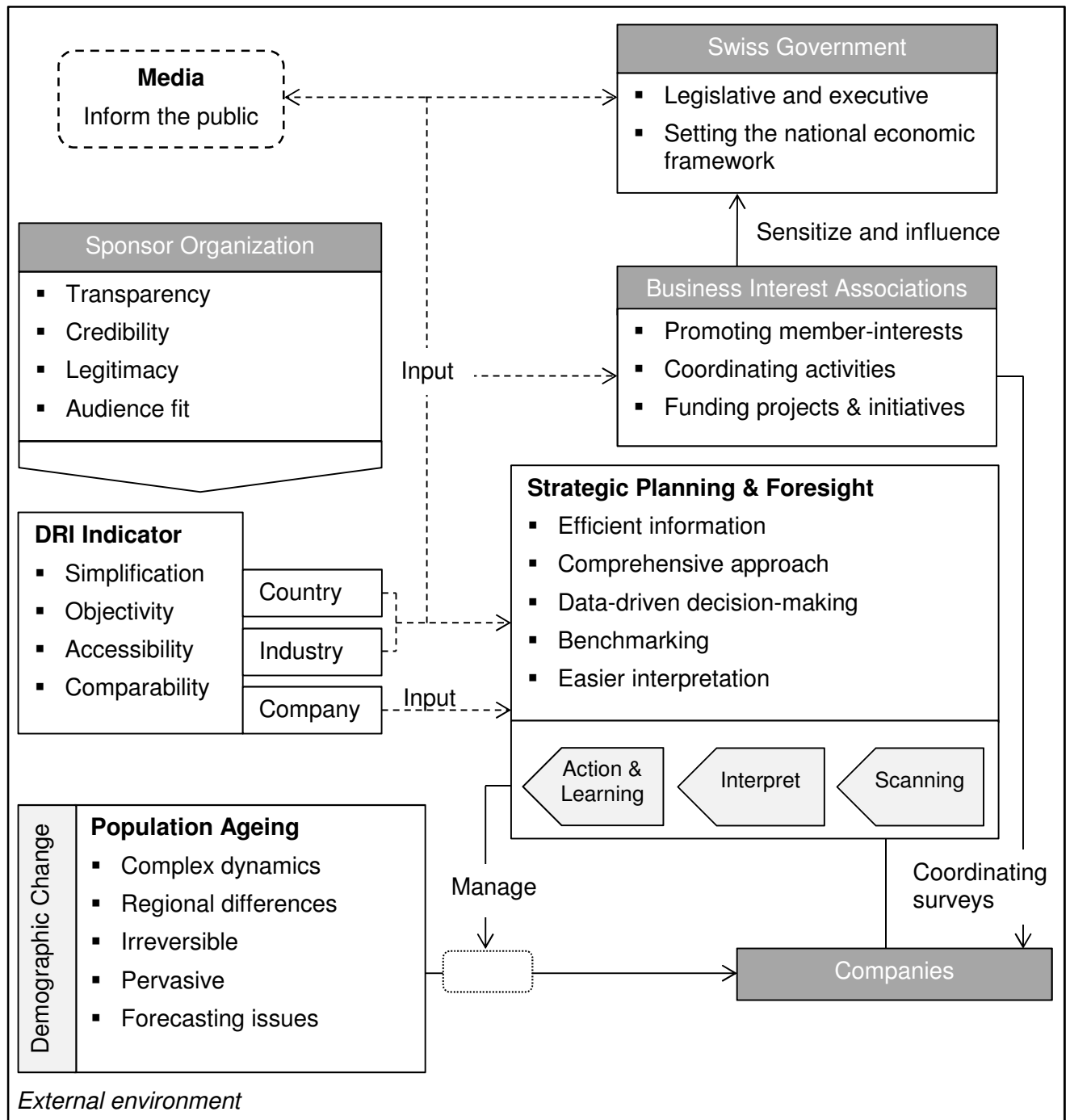


Figure 1: The rationale behind a DRI with industry- and national-level aggregation

Own illustration. Based on Bonafini (2013) p.29.

At all three levels, the DRI can be disaggregated into its different components, thereby providing a rich variety of sub-indicators where specific issues at any level and in any dimension can be identified. The first aggregation at an industry level enables the mapping of demographic pressure points for the different Swiss industries and the evaluation of their respective demographic competitiveness. The second aggregation at national level results in one single DRI value for the whole country⁵ and occurs to enhance the communicative power of the DRI towards the media and general public. The yearly publication on October 1, the International Day of Older Persons, of the DRI stimulates a periodical nation-wide public debate on population ageing and increases the general awareness of the topic in a media-friendly format (United Nations, 2014c).

On a company level, managers are confronted with updated key performance indicators (KPIs) on a yearly basis and are hence challenged to rethink and adapt their strategic initiatives regularly. They can use the industry-level DRI for benchmarking, which is one of the most-used management practices worldwide (Rigby, 2013). While some of the dimensions measured at a company level cannot be controlled by companies (e.g. lack of skilled labor due to the shrinking labor supply), they provide sectorial business interest associations with information on the population ageing-induced pressures experienced by their members. In order to protect their sector's competitiveness, the business interest associations can decide to intervene by coordinating and organizing initiatives with their members, as well as pressuring the Swiss federal administration and parliament to take measures to ameliorate the framework conditions of the Swiss economy.

2.2.1 Inspired by the Demographic Fitness Index

In 2006, the Adecco Institute introduced the Demographic Fitness Index (DFX) as a new corporate performance indicator for age management. It measured and monitored the degree of preparedness of firms to face population ageing across the five dimensions of career management, lifelong learning, health management, knowledge management, and age diversity management. The Adecco Institute suggested that by improving its DFX score, a corporation could increase its competitiveness, innovation, and productivity by up to 20 percent (Adecco, 2006, p.1).

Five hundred medium- and large-sized companies from all industry sectors constituted the national samples from which Adecco inferred conclusions they declared to be valid for the whole economy (Adecco Institute, 2006, p.8). For their survey answers, firms were awarded a company-level DFX score between 100 and 400 points which was further aggregated at the national and European level (Adecco, 2006, p.1). After its third edition in 2008, the DFX

⁵ As the DRI aggregation at a national level is of little importance for the DRI rationale at industry levels, the present thesis will mostly ignore it.

was discontinued without explanation by the Adecco institute (Adecco Group, 2011). One of the possible motives for the cessation of the DFX might have been that its dimensions overlapped too strongly with Adecco's human resources solution offerings, which would thereby decrease the indicator's credibility (Adecco, 2014).

The DRI has been influenced by the DFX concept on three levels in particular: (i) the three levels of aggregation, (ii) the sourcing of information among companies instead of public statistics, and (iii) its conceptualization as a management tool for strategic planning. Also, the DRI intends to benefit from the unaddressed market potential identified by the DFX, as according to the Adecco Institute, more than 50 percent of the firms surveyed in Switzerland in 2008 had not analyzed their age structure yet (Adecco Institute, 2008, pp.2-3).

2.3 Key underlying hypotheses

The legitimacy and purposefulness of a DRI aiming at integrating population ageing into the long-term strategic considerations of the Swiss private sector stakeholders rest on two key hypotheses. The first hypothesis states that strategic planning has a positive effect on organizational performance. The second hypothesis affirms that population ageing and its consequences are unavoidable and hence need to be dealt with. Both are discussed in the following two subsections.

2.3.1 Strategic planning has a positive effect on organizational performance

Even though studies on the effects of strategic planning on organizational performance have long generated ambiguous findings, recent publications have been remarkably consistent in indicating the favorable impact of strategic planning on company performance (Andersen, 2004, p.1273; Boyd, 1991, p.353; Capon, Fraley, & Hulbert, 1994, p.105). Kürschner and Günther (2012) suggest that the strongest positive correlation with organizational performance is achieved when strategic planning is both institutionalized and pursued intensively (p.37). Similarly, Wilson and Eilertsen (2010) who studied the role played by strategic planners for companies during the financial crisis in the late 2000s found that organizations with institutionalized and cyclical strategic planning processes were better prepared for the economic crisis (p.14).

According to a meta-analysis of the existing academic literature, strategic planning has not only a significant positive effect on the organizational performance of large firms, but also on that of smaller firms with less than 500 employees (Brinckmann, Grichnik, & Kapsa, 2010, pp.25, 31). The fact that strategic planning is also relevant for the organizational performance of smaller firms plays a crucial role in the case of Switzerland. Indeed, according to the statistics published by the Swiss Federal Statistical Office in 2011, 99.8 percent of the almost 550'000 Swiss companies are SMEs (Swiss Federal Statistical Office, 2011).

2.3.2 Population ageing and its consequences are unavoidable

“No other force is likely to shape the future of national economic health ... as the irreversible rate at which the world's population is ageing” (Mrsnik, 2010, p.2). The population ageing megatrend is inevitable, it is global, and it is expected to be permanent. In contrast to other global megatrends, it cannot possibly be reversed through legislation, as women cannot be forced to bear more children (United Nations, 2009, p.25; C. Wilson, 2011, p.385).

Switzerland belongs to the countries that have already reached a relatively advanced state of population ageing (Bonafini, 2013, p.7; Huber & Groth, 2013, p.2). Its population is ageing from both ends. On the bottom of the population pyramid, there is a below replacement level fertility rate resulting in fewer young, and on the top of the pyramid, there is an ever-increasing life expectancy resulting in more elderly persons (Höpflinger, 2010, pp.53-54).

Presently, only migration could help Switzerland avoid population ageing. Switzerland has a tradition of positive net migration flows which dates back to the 1890s (University of Zürich, 2010). Between 2002 and 2012, the Swiss net migration flows averaged a yearly inflow of more than 55'000 immigrants (Swiss Federal Statistical Office, 2014c). As a result, in 2012, foreign nationals made up 23.3 percent of the permanent residents in Switzerland, a high proportion by international comparison (Swiss Federal Statistical Office, 2014b). Meanwhile, there is a consensus among demographers that any reasonable level of immigration cannot have a significant positive effect on population ageing in low-fertility countries like Switzerland (Keely, 2009). Therefore, the positive net migration flows of the past and the future cannot be expected to preserve the Swiss population from structural ageing, even though they are expected to prevent it from shrinking⁶ (Boehm et al., 2011, p.8). As a consequence, the Swiss old age dependency ratio is forecasted to increase from four working aged people to every one senior citizen in 2005 to only two working aged people per senior citizen in 2050 (Boehm et al., 2011, p.10).

In light of these demographic imperatives, companies have no choice but to find the strategic tools that can help them manage the long-term implications of demographic change on their organizations, if they want to thrive in the structurally older economy of the future (Tempest, Barnatt, & Coupland, 2002, p.476).

⁶ Unlike Europe which is the only continent whose population is expected to decrease by 2050 (May, 2013, p.106).

3. The DRI as a strategic tool

This chapter analyzes how the theory of the strategic management field justifies the organizational need for a tool such as the DRI. The first section looks at organizational inertia. The second section focusses on strategic foresight. The third section summarizes the implications of the strategic perspective for the DRI.

3.1 Organizational inertia

Physics' concept of inertia is commonly used in a metaphorical way to describe the struggles of organizations caught in routines in order to achieve internal change (Huang, Lai, Lin, & Chen, 2013, p.980). According to Rohrbeck and Gemünden (2011), organizational inertia is one of the main reasons why Fortune 500 companies have an average life expectancy of no more than 40 years (p.232).

The first elaborate theory of structural inertia was introduced by Hannan and Freeman (1977) who stated that among other processes, it is the informal fixation on past experiences as benchmarks and rigid operating procedures which render organizations increasingly passive. This thereby hinders firms from effectively developing and implementing high impact strategic change initiatives. The resistance with which the change initiatives are met arise from complex organizational dynamics revolving around collective and individual psychological defense mechanisms, organizational politics, and power (Hodgkinson & Wright, 2002, p.974). When elements which contribute to the fragile organizational power balance such as personal interests, the organizational structure, or operating procedures are challenged, those resistance mechanisms are immediately triggered (Huang et al., 2013, pp. 992-994). The particularity of those change barriers is that the individuals who created and maintain them are to a large extent unaware of their existence. The resulting inertia therefore remains an unconscious and unexamined part of the organization (Godkin & Allcorn, 2008, pp.84-85).

Organizational inertia can prove fatal for companies, as it hinders them from planning ahead to adapt their business models and innovation capacity to the requirements of megatrends such as population ageing until they have reached a point in time when it is too late to react (Godkin & Allcorn, 2008, p.82; Huang et al., 2013, p.978). In the light of this phenomenon, it is not surprising that the mismanagement of population ageing ranks fifth in the likelihood to occur in the next ten years amongst 50 global risks compiled within the WEF Global Risk Report 2013 (H. Lee, 2013, p.11). Therefore, preventive measures ought to be institutionalized in order to avert the natural tendency of organizations to neglect change initiatives.

According to Hadgkinson and Wright (2002), decision-makers should periodically be confronted with new insights regarding environmental changes and reflect on the

assumptions which define the strategic imperatives for their organizations (p.950). Similarly, Godkin and Allcorn (2008) recommend the use of processes and tools requiring the systematic questioning of existing assumptions and practices (pp.90-91).

Analyzing and understanding megatrends

However, even when they are addressed in a timely manner, trends tend to remain only superficially analyzed and poorly understood by organizations (Boehm et al., 2011, p.13; Liebl & Hermann, 1996; Müller-Stewens & Müller, 2010, p.242). Slaughter (1993) suggests that by cursorily examining megatrends, the organization focuses on a too narrow definition of the megatrend in question. Therefore, it reinforces the organizational inertia by wrongly concentrating the organizational efforts on a single aspect of a comprehensive issue instead of enhancing the organization's reaction capacity (p.848).

Similarly, Groddeck and Schwarz (2013) suggest that megatrends are complex concepts which are over- and underdetermined at the same time (p.33). They lack the concrete meaning required to be properly interpreted and instead reflect the different arbitrary meanings assigned to them by observers (von Groddeck & Schwarz, 2013, p.28). Therefore, megatrends ought to be thoroughly disaggregated and analyzed in the light of the organization's strategy, interpreted, and understood before acted upon (Lochbrunner, 2006, pp.62-63; von Groddeck & Schwarz, 2013, p.33).

3.2 Strategic foresight

Müller-Stewens et al. (2012) define strategic foresight as a "participatory process with the objective of supporting strategic decision-making through the anticipation, analysis, and interpretation of long-term trends in and scenarios of a company's socio-economic environment" (p.66). With the strategic foresight process which focusses on the long-term positioning of the company, organizations formulate assumptions about the changes in their external environments and about the corporate strategy adjustments required to adapt (p.64).

More than a collection of analytical tools, strategic foresight stands for an organizational strategic support process requiring interdisciplinary and cross-functional communication and collaboration (Müller-Stewens & Müller, 2010, p.244). Godet (2001) emphasizes the importance of strategic foresight by relaying how it contributes to the identification of issues and trends that could have created sudden emergencies at a later point in time had they been overlooked. Such emergencies typically claim the full attention and resources of decision makers and draw them away from the long-term investments needed to ensure the organization's future. Hence, even without reaping short-term financial benefits, strategic foresight is vital to ensure the organization's continuity (p.7).

Depending on the scholarly approach, strategic foresight is defined as a process or as a capability. According to Rohrbeck (2011), the latter definition is much broader, as it includes not only the formal processes, but also any other informal means by which organizations detect, anticipate, and react to environmental change, such as encouraging employees to watch out for emerging or changing trends and empowering them to act upon their observations (p.11).

Drawing from both perspectives, this master's thesis perceives strategic foresight as an institutionalized process with the vocation to support, ingrain, and nurture collective foresight capabilities within an organization. It is built around three complementary sub-processes - environmental analysis, organizational learning, vision building - which in practice usually co-exist as part of a single strategic foresight concept (Müller-Stewens et al., 2012, pp.66-67; Müller-Stewens & Müller, 2010, p.251). It is especially the latter two sub-process types which actively develop organizational strategic foresight capabilities by fostering creativity, challenging groupthink, strengthening future orientation, enhancing the ability to communicate, and encouraging collaboration among coworkers (Müller-Stewens & Müller, 2010, p.248; Van der Heijden, 2004, p.210).

Fueled by the need of organizations to cope with the growing complexity of their external environment, the strategic foresight literature has been growing since the 1960s (Gruber & Venter, 2006, p.959). The aim of this section is to take a practical approach to the existing strategic foresight body of knowledge and to propose a strategic foresight framework in which the DRI can be embedded.

3.2.1 Understanding strategic foresight

As briefly touched upon by Bonafini (2013), the often confusing concept of strategic foresight needs to be distinguished from two other concepts to be properly understood (pp.15-18).

First, strategic foresight is not strategic issue management (SIM), even though both approaches use similar tools and follow the common objective of turning external organizational threats into opportunities (Müller-Stewens & Müller, 2010, p.239; Oomens & van den Bosch, 1999, p.55). SIM is defined as a tool to address previously delimited strategic issues on short notice or in case of emergency. Thought of as a quick fix, it leaves the resolution of the underlying strategic problems to the periodic strategic planning sessions (Ansoff, 1980, p.143). Strategic foresight, on the other hand, monitors the emergence and evolution of predefined as well as unexpected trends and therefore adopts a much broader environmental perspective (Burmeister, Neef, & Beyers, 2004; G. Müller-Stewens et al., 2012, p.65).

Second, strategic foresight is not environmental scanning, which is nothing more than an organizational collection method of relevant forward-looking, external information. It involves

“both looking at information (viewing) and looking for information (searching)” (Choo, 1999, p.22) with an initially broad scope and gradually narrowing focus. According to Slaughter (1999), environmental scanning represents only one of the many tools within the comparatively comprehensive foresight concept (p.442). Instead, strategic foresight, by definition, is intended to be an integral and continuous part of the organizational strategic processes on all hierarchical levels and not an isolated, episodically used, or marginal tool (Voros, 2003, p.12).

This same distinction can be repeated between strategic foresight and the remainder of its tools, which consist of a portfolio of methods and frameworks pragmatically selected among different scientific disciplines. The non-exhaustive list of tools encompasses trend analysis, scenario planning, the Delphi method, cross-impact analysis, decision modeling, econometric models, mind mapping, participative methods, genius forecasting, statistical modeling, simulations, focus group interviews, morphological analysis, structural analysis, technology-series analysis, time-series analysis, trend-impact analysis, dynamic modeling, wild cards, vision, intuition, and road mapping (Aaltonen & Sanders, 2006, p.31; Müller-Stewens et al., 2012, p.68).

3.2.2 The fallacy of predictions

The declared purpose of strategic foresight “is to enhance an organization’s ability to consider various future scenarios without any preconceptions, debate their implications, examine the risks involved, estimate potential benefits, predict the costs and investments involved to arrive with practical alternatives that can be translated into executable actions” (Makridakis, 2004, p.XIV). This stands in contrast to the common misconception that its purpose is the elaboration of market development forecasts, a strongly controversial management tool.

Mintzberg (1994) acknowledges that while repetitive patterns, e.g. seasons, are quite reliably predictable, the prediction of discontinuities for non-repetitive patterns is practically impossible (p.110). As a matter of fact, corporate forecasts are becoming increasingly inaccurate due to their environment’s complexity and the fast pace of change. Even though, projections and forecasts are still heavily used by decision makers who have grown accustomed to working with them, the user base of qualitative and participative methods is growing (Müller-Stewens et al., 2012, p.73).

Organizations increasingly realize that strategic foresight needs to be “synthetical and inductive rather than analytical and deductive” (Voros, 2003, p.12). Indeed, organizations need to be able to rely on the synthesizing skills of their decision makers rather than on the forecasts of their systems in order to develop an understanding of the upcoming threats and opportunities (Makridakis, 2004, p.XIV; Mintzberg, 1994, p.110; Müller-Stewens & Müller,

2010, p.249). Comprehensive syntheses should take into account environmental dynamics such as trends. Compared to forecasts, trends are more broadly defined and relatively stable phenomena. They do not change abruptly and usually maintain their course despite occasional deflections. This makes them relatively predictable and therefore strategically significant for long-term strategic planning. In fact, trends allow organizations to take into account the forces shaping their external environments without exposing themselves to the unreliability of predictions (Becker & Freeman, 2006, p.19; Boehm et al., 2011, p.13; Liebl & Hermann, 1996; Müller-Stewens & Müller, 2010, p.242).

The field of demography is also subject to the fallacy of predictions. Three institutions - the United Nations, the World Bank Group, and the United States Census Bureau - publish global population forecasts in regular intervals. While uncertainty remains inherent to specific and narrow forecasts, broad trends regarding fertility, mortality and migration can be predicted with a relatively high level of confidence (Bongaarts & Bulatao, 2000, p.1; R. Lee, 2003, p.179). In fact, long-term projections of the world population size made by the United Nations in the past have almost never been off by more than four percent (Bongaarts & Bulatao, 2000, p.3).

“Of all external changes, demographics – defined as changes in population, its size, age structure, composition, employment, educational status, and income – are the clearest. ... They have the most predictable consequences [as well as] known and almost certain lead times” (Drucker, 1985, pp.87-88). However, the error margin more than quadruples when it comes to forecasts for national population sizes over a 30-year period, which is why low, medium, and high scenarios are published (Bongaarts & Bulatao, 2000, p.3). Therefore, while the demographic megatrend of population ageing remains undisputed (cf. subsection 2.3.2), this is not the case of single demographic forecasts which render the accurate projection of future population structures impossible.

3.2.3 The strategy and strategic foresight processes

In their literature review, Müller-Stewens et al. (2012) identify three conceptualizations of the strategic foresight process, all of which consist of a linear process with three phases (p.67). Horton (1999) and Major and Cordey-Hayes (2000a) propose two models where information is translated into understanding and should thereby fulfill certain utilization requirements for the organization. In the former model, the understanding needs to include the implications of the observed trends for the organization's future (Horton, 1999, pp.6-8; Müller-Stewens et al., 2012, p.67; Voros, 2003, p.13). In the latter one, the difficult to use, abstract knowledge gained from the information must be translated into a short-term, decision-oriented, and operational understanding (Major & Cordey-Hayes, 2000b, p.422; Müller-Stewens et al., 2012, p.67).

Even though those models are both instructive, it is the third model proposed by Voros (2003) which appears particularly insightful and practical. His generic foresight process framework delimits the three distinctive phases of information gathering, foresight activities, and output production. The resulting product is then used as input for the strategy development and planning activities which occur in a separate phase (p.11).

During the input-phase, information is gathered and the environment is scanned in order to acquire strategic intelligence. Analysis, interpretation, and prospection are the three sub-steps of the foresight work-phase during which trends are monitored and their implications for the organization are evaluated (Voros, 2003, pp.14-15). The output-phase generates a range of both tangible and intangible outputs. The tangible outputs are the concrete strategic options that materialize during the process. The intangible outputs, on the other hand, comprise the organizational changes engendered by the process such as paradigm shifts (Voros, 2003, p.15). The whole framework is conceptualized as a customizable work flow template (Hutzschenreuter & Kleindienst, 2006, p.673; Voros, 2003, p.20) and leans on Mintzberg's (1994) distinction between the inter-dependent and equally important steps of the strategic process - strategic thinking, strategy-making, and strategic planning (Voros, 2003, pp.12-13).

Mintzberg defines strategic planning as an analytical activity which deals with the articulation and elaboration of strategies to achieve goals the organization has already adopted (Mintzberg, 1994, p.107; Voros, 2003, p.12). Planning is about "breaking down a goal or set of intentions into steps, formalizing those steps so that they can be implemented almost automatically, and articulating the anticipated consequence or results of each step" (Mintzberg, 1994, p.108). Strategic thinking, in contrast, is based on the synthesizing abilities of strategizers who have to gain an integrated view of the organization in its environment.

According to Mintzberg (1994), the insights and perspectives gained through strategic thinking emerge throughout the organization and must be cautiously collected (p.108). Strategic thinking is particularly important for entrepreneurial market creation based on emerging trends (Liebl & Schwarz, 2010, p.324). The link between strategic thinking and strategic planning is called strategy development or strategy-making. During this phase, objectives are articulated based on the explored options of the strategic thinking phase (Mintzberg, 1994, p.111; Voros, 2003, p.13). According to this model, strategic foresight is "an element of strategic thinking, which is an input to strategy-making, which then directs strategic planning and action" (Voros, 2003, p.13).

While agreeing on a generic foresight model based on three consecutive phases, Müller-Stewens et al.'s (2012) and Müller's (2008) empirical findings differ from existing literature in their representation of the strategic foresight process as iterative loops instead of linear sequences. As "the output of the activity is continually revised in a dialogue with other parties in the same phase or over several phases" (Müller-Stewens et al., 2012, p.73), feedback

loops are essential for organizational learning, reinterpreting the environmental changes, and realigning organizational activities. By contrast, linear process models run the risk of focusing too narrowly on a sequential process with clearly defined beginnings and endings, as well as only tangible process-outputs (Müller, 2008, p.364; Müller-Stewens et al., 2012, p.73). While Voros (2003) acknowledges that feedback mechanisms are not featured in his model diagram for reasons of diagrammatic simplicity, he insists that his model is in fact imbedded in a feedback system. He promotes that feedback loops connect every step to all prior ones by “closing the loop’ so that continuous re-assessments and ‘course corrections’ are possible along the ‘strategic journey’” (p.16).

According to Müller-Stewens and Müller (2010), strategic foresight holds a phase-specific supporting role throughout the strategic process (pp.251-253). Based on their model and the ones proposed by Voros (2003) and Mintzberg (1994), the following comprehensive model of the interaction between the strategic process and the strategic foresight process can be drawn.

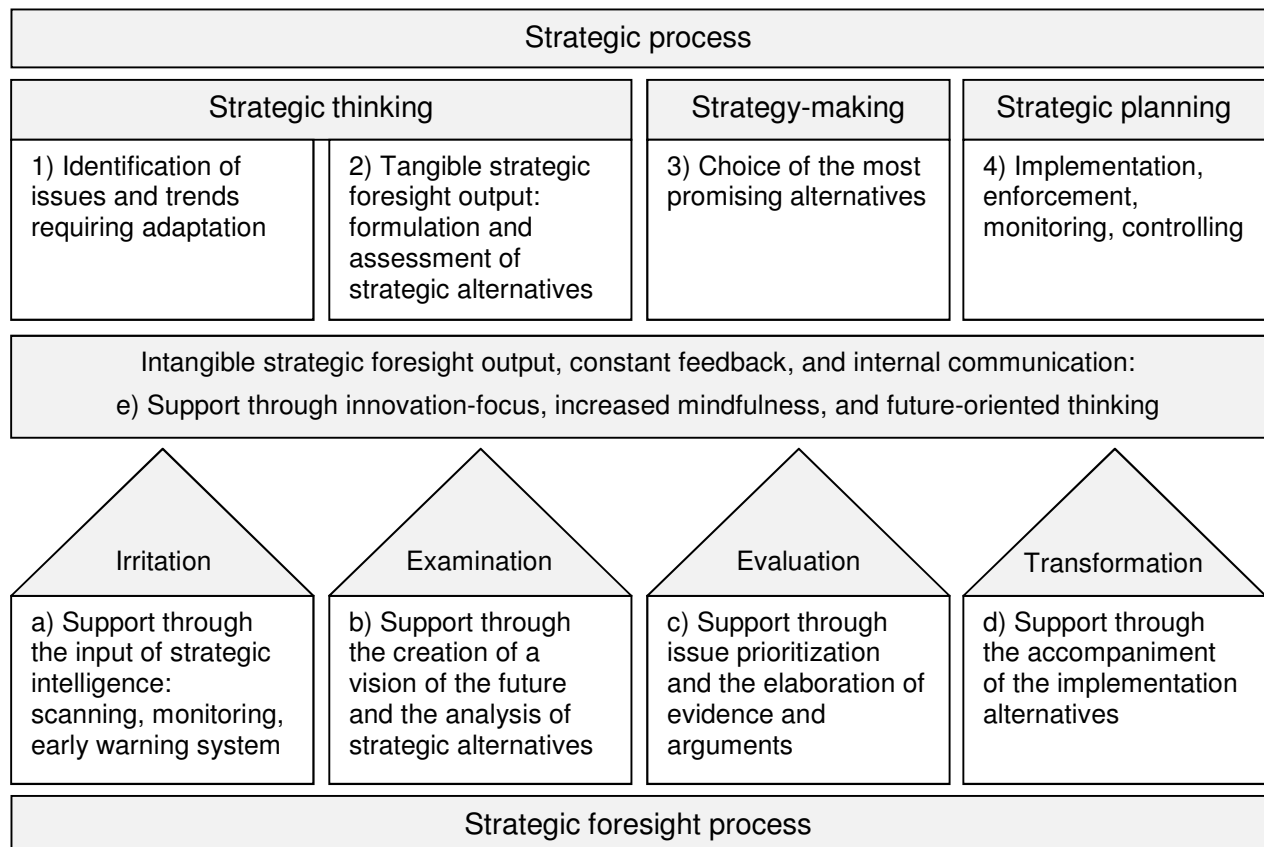


Figure 2: The strategic process and strategic foresight process interaction

Own illustration. Based on Müller-Stewens and Müller (2010) pp.251-253; Voros (2003) p.14; Mintzberg (1994) pp.107-108.

The resulting model depicts strategic foresight both as a phase (2) within the strategic process (1-4) and as a continuous support framework for the strategic process (a-e). In line with the subtle role it plays in organizations, the intangible strategic foresight output holds a

special position as a moderating variable and catalyst between the strategic process and the strategic foresight process (e).

The DRI as a strategic foresight tool

In the issue identification phase (1), the DRI supports the acquisition of information on population ageing and its effects on organizational performance (a). The strategic intelligence inputs are used as irritating factors to question existing strategies and their underlying assumptions as well as the efficiency of already implemented measures.

In the tangible strategic foresight output phase (2), strategic alternatives are elaborated and examined. With its many dimensions and accompanying explanations, the DRI provides illuminative suggestions on how to address the organizational effects of population ageing. It enables the contextualization of issues by offering sectorial and national benchmarks (b).

In the strategy-making phase (3), the DRI adopts a coordinating function, as it provides a debating structure, evidence, and arguments with which strategic alternatives are evaluated and chosen. In addition, the DRI becomes an internal communication tool by allowing the organization to express and harmonize its assumptions concerning the future and to thereby set the direction and priorities for the strategic debate (c).

In the strategic planning phase (4), the DRI accompanies the implementation of strategic alternatives. As a monitoring tool, it measures the effectiveness of the implemented measures, thereby providing a quantifiable basis that can be used for their evaluation, justification, and optimization (d).

Finally, with its yearly publication and media-friendliness, the DRI increases the awareness of population ageing among organizational stakeholders, thereby enhancing the intangible strategic foresight output effects on the organization's mindfulness, innovation-focus, and future-oriented thinking (e).

3.2.4 The importance of ownership, institutionalization, and monitoring

Based on the literature review, three elements appear to be particularly important for the conceptualization of the DRI as a strategic foresight tool.

First, strategic foresight activities are most beneficial for an organization when they are completely integrated in its structure and when the members of the organization perform these functions (Hodgkinson & Wright, 2002, p.950). Executing the strategic foresight process generates ownership of the outcomes and establishes its legitimacy, thereby facilitating assimilation and commitment throughout the organization. Nonetheless, third parties may be of significant added value when it comes to interpreting the implications of external developments for the organization's future, especially in areas non-familiar to the employees (Horton, 1999, p.7-8).

Second, strategic foresight activities tend to vary with evolving organizational contexts. Empirical research shows that in organizations, foresight activities are regularly realigned because of changes in decision makers' interest for strategic foresight activities (Müller-Stewens et al., 2012, p.75; Müller-Stewens & Müller, 2010, pp.240-241). Deeply anchoring strategic foresight activities in the organizational structure and consciousness thus appears to be crucial in order to counteract the cyclicity of managerial interests and to ensure the continuity and consistency required to create a notable impact on organizational performance (Hines, 2002, p.337). However, the strategic-management literature only offers a very fragmented and limited overview of management options available for the institutionalization of strategic foresight activities (Müller-Stewens et al., 2012, p.64). In addition, managers usually lack knowledge and experience on the topic (Vecchiato & Roveda, 2010, p.99). Nonetheless, Van der Heijden (2004) observes that despite this nescience, many organizations value the idea of developing and institutionalizing strategic foresight competency so highly that they rush the process and experiment with ad-hoc methods. Seldom, these activities achieve satisfactory results (p.204).

Third, many strategic foresight processes fail in practice because no monitoring has been introduced that would control their performance and justify their existence. This common inattention is directly linked to the inherent efficiency measurement problems strategic foresight shares with other activities such as employee training or research and development (Horton, 1999, p.8; Müller-Stewens & Müller, 2010, p.254). Those efficiency measurement problems include the lack of quickly measurable short-term impacts, moderating variables which blur the causal relationship of strategic foresight activities and long-term organizational performance, as well as the often intangible nature of strategic foresight output (Blackman, 2001, pp.3-4; Horton, 1999, p.8). Therefore, strategic foresight often lacks economic legitimacy (Müller-Stewens & Müller, 2010, pp.240-241). To remedy this, Müller (2008) proposes to use indicators as project controlling and performance measurement systems, amongst other tools (pp.372-373).

3.3 Takeaways from the strategic perspective

In order to overcome inertia and effectively address megatrends such as population ageing, organizations and their stakeholders need a periodic nudge reminding them to systematically question their existing assumptions and practices (cf. section 3.1). With its yearly publication, the DRI could become a de facto administrator of such periodic nudges.

Instead of ending up as a, by definition, unreliable forecasting tool, the DRI ought to be designed as a monitoring tool (cf. subsection 3.2.2). As such, it could provide the data needed to trigger strategic foresight activities (the above-mentioned nudge) and it could keep playing an essential role throughout the integral organizational strategic process (cf. subsections 3.2.1 and 3.2.3). The aggregations at industry and national levels are crucial for

the contextualization of the company DRI measures, as they allow firms to assess their demographic competitiveness relative to benchmarks (cf. subsection 3.2.3). In order to optimize its impact, the DRI needs to be formally institutionalized in the organizational structures and its existence needs to be justified with periodic performance measurements (cf. subsection 3.2.4).

4. The DRI as a composite indicator

In line with Bonafini's (2013) delimitation of the topic, this chapter focuses on business-relevant socio-economic indicators (p.21). The first section describes the key elements of the balanced scorecard management approach which could be transferred to the DRI concept. The second section argues that the composite indicator format is the most appropriate for the DRI. The third section compares the DRI with other indicators to establish its differentiation and monetization potentials. The fourth section summarizes the implications of the indicator perspective for the DRI.

4.1 The balanced scorecard management approach

The balanced scorecard is a tool that was created by Kaplan and Norton in 1992 and which aims at translating strategy into action (Epstein & Manzoni, 1997, p.3). It has been refined over the last decades, and has been successfully adopted "in all types of organizations, including both large and small, manufacturing and service, public and private, growth and mature, and profit and nonprofit organizations" (Bible et al., 2006, p.23). The balanced scorecard rests on the fundamental assumptions that (i) the implementation of organizational strategies has a higher success rate if it is supported by a performance measurement system, (ii) the included KPIs should capture as broad a spectrum of the organizational activities as possible, and (iii) the organization's strategic goals need to be segmented into actionable sub-sets (Epstein & Manzoni, 1997, p.2).

The balanced scorecard is a set of forward-looking, financial, and non-financial KPIs that assess and predict present and future organizational success (Epstein & Manzoni, 1997, p.3; Kaplan & Norton, 1993, p.135). While financial indicators are effective in assessing the present success of organizations, they are unable to evaluate the consequences of decisions and actions without an important time lag, and are hence known as lagging indicators. The balanced scorecard therefore prioritizes non-financial indicators among its metrics. By measuring operational or environmental dimensions that will have a financial impact at a later stage, non-financial indicators adopt a proactive perspective and are hence known as leading indicators (Epstein & Manzoni, 1997, pp.6-8).

A decision-making tool and strategic planning framework

The initial objective of the balanced scorecard was to give "managers a succinct overview of key parameters to support decision-making" (Epstein & Manzoni, 1997, p.3). It is a resilient framework that uses KPIs to track and manage strategy implementation and its impact on the organizational performance (Kaplan & Norton, 1993, p.134, 1996, p.85). Developed as a performance measurement and management tool, it is now increasingly used as a strategic planning framework (Bible, Kerr, & Zanini, 2006, p.23; Lawrie, Kalff, & Andersen, 2005, p.15). Indeed, the performance indicators on the balanced scorecard provide not only

quantitative data for decision-making, but also a starting point for the regular and systematic exploration of underlying assumptions (Epstein & Manzoni, 1997, pp.9-10).

A way to increase organizational members' quality of judgment and impact

In practice, the balanced scorecard has become known as a remarkable communication tool, capable of aligning the efforts of varying business units around common organizational goals. It contributes greatly to the integration pace and success rate of strategic initiatives by establishing a link between existing resources, intangible assets, concrete actions, and tangible outcomes (Bible et al., 2006, p.21). When the balanced scorecard is translated into a strategy map, which is the visual representation of the critical relationships between the metrics monitored and their collective impact on organizational performance, employees become even more thoroughly aware of the cause-and-effect links between their behavior and desired outcomes (Kaplan & Norton, 2000, pp.167-168). According to Cheng and Humphrey (2012), demonstrating the strategic objectives of a balanced scorecard as a strategy map increases the managers' ability to successfully implement strategic initiatives. More specifically, it allows them to decide more accurately whether a piece of information is relevant or not with regard to a specific strategy and it increases their chances of opting for actions which contribute to the successful implementation of the strategy in question (p.899).

4.2 Composite indicators

The impact of population ageing on companies is multidimensional. This complexity does not allow for a simplistic DRI, especially as the DRI has the ambition to become a strategic management tool for three different governance levels and therefore needs to provide information fit to evaluate and promote policies at industry and national levels as well as to guide decision-making, monitor the implementation of initiatives, and measure their effectiveness at a corporate level. This is why the composite indicator format appears to be the most suitable for the DRI. A well-designed composite indicator can provide political and economic leaders at every organizational level with the aggregated and detailed data they need to make evidence-based decisions and resolutely address the effects of population ageing on the Swiss economy.

4.2.1 The rise of composite indicators

Over the last decades, an increasing amount of statistical information has been made available to the public thanks to technological advances and a growing public demand for transparency. International organizations such as the European Commission, the United Nations, and the OECD have been actively supporting the buildup of statistical capacity. This has significantly enlarged the amount of quantitative information available to decision makers and it is increasingly utilized (Wong, 2003, p.274; Zhou, Fan, & Zhou, 2010, p.360) to the

extent that in some cases statistical measures “tend to replace political debate with technical expertise” (Merry, 2011, p.S83).

According to Saltelli (2006), the general public has also grown quite fond of statistic-based narratives, as indicated by the rising media coverage of composite indicators such as the WEF’s Global Competitiveness Index, the OECD’s PISA study, the United Nation’s Human Development Index, and Transparency International’s Corruption Index (p.72). Meanwhile, the plethora of regularly published single indicators is burdening practitioners with an information overload. Therefore, many institutions have started to focus their efforts on aggregate measures, often focusing efforts on the production of their own signature composite indicators. Those indicators cover fields as varied as economic and business statistics, gender equality, quality of life, environmental sustainability, corruption, globalization, innovation capacity, and national competitiveness (Cherchye, Knox Lovell, Moesen, & Van Puyenbroeck, 2007, p.750; Hák & Janoušková, 2012, p.33; Munda & Nardo, 2003, p.2).

Sets of indicators constitute a widespread alternative to composite indicators for monitoring socio-economic progress and sustainability. By assembling a varied selection of indicators on a dashboard, different aspects of complex processes can be monitored (Franceschini, Galetto, Maisano, & Mastrogiacomo, 2008, p.139). Meanwhile, indicator sets feature two weaknesses which render them unsuitable for the DRI. First, they are often criticized for their heterogeneity, as they are said to “deliver too much information to be efficient communication tools, even when their main messages are summed up in a limited set of headline indicators” (Hák & Janoušková, 2012, p.32). Indeed, people are often confused when presented with several indicators at once and lack the required attention span to properly understand the implications of the set as a whole. Second, sets of indicators are blamed to lack the required architecture to guide the behavior of their users towards the achievement of an overarching goal. These two weaknesses are not shared by the composite indicator format (cf. subsection 4.2.4), which is thus often times preferred to the set of indicators version (Franceschini et al., 2008, p.140; Hák & Janoušková, 2012, p.33).

4.2.2 Understanding composite indicators

The term composite indicator is issued from the OECD terminology and, in practice, is used interchangeably with the terms derived indicator, compound indicator, index, and aggregated indicator (Franceschini et al., 2008, p.140; Hák & Janoušková, 2012, p.33). Leaving some of the terms unaddressed, Hák and Janoušková (2012) distinguish between aggregated indicators, indices, and composite indicators, but they acknowledge that academia has not yet reached a consensus on the precise usage of those terminologies. According to their definition, aggregated indicators are “summations of accounts constructed from raw data measured in the same unit” (p.33), such as the gross domestic product. Indices, on the other

hand, combine sub-indicators which “measure the same class of components that are in a common unit [or that] are transparently transformable into a common unit” (pp.33-34), such as Standard & Poor’s 500. Finally, composite indicators “combine various aspects of a given phenomenon ... into a single number with a common unit” (p.34), such as the Ecological Footprint (pp.33-34). Consequently, composite indicators are created by aggregating and synthesizing sub-indicators into a single index, based on “an underlying model of the multidimensional concept that is being measured” (Zhou et al., 2010, p.360). The end result is “an aggregate ordinal or cardinal [performance] measure” (Saltelli, 2006, p.65). Composite indicators are primarily used for decision support, performance monitoring, benchmarking, and public communication (Hák & Janoušková, 2012, p.33; Zhou et al., 2010, p.364). Due to their ability to convey micro-level data at a macro level, they are often used to measure and compare national performances (Munda & Nardo, 2003, p.2; Saltelli, 2006, p.65; Zhou et al., 2010, p.364).

According to Munda and Nardo (2003) the quality of composite indicators depends on five criteria. The first criterion is information availability. A composite indicator which is built on unreliable data or that requires missing data for its construction lacks legitimacy. Due to the usual scarcity of suitable data, composite indicators are often the result of a trade-off between scientific accuracy and data availability. The second criterion is the selection of complementary sub-indicators which together help measure the underlying multidimensional phenomenon. The quality and inclusiveness of this selection determines to a large extent the interpretability of the resulting composite indicator. The third criterion is the interpretation of the single sub-indicators. The question is whether they ought to be maximized or minimized to contribute to the measurement of the underlying composite phenomenon and how they interact when doing so.

The fourth criterion is the determination of the relative importance of each sub-indicator (p.15). Weights can be assigned according to the perceived relative importance of single sub-indicators or to endogenous characteristics implied by their data. The more subjective the weighting of sub-indicators, the more vulnerable to criticism the composite indicator becomes, especially when representatives of a particular special interest are involved in the development process (Munda & Nardo, 2003, p.16; Saltelli, 2006, p.65). The fifth criterion is the choice of the mathematical aggregation convention used for the construction of the composite indicator, as there are no methodological standards ensuring the validity of the construct (Munda & Nardo, 2003, p.15). While experts are usually able to find a consensus on the selection of sub-indicators which can be associated with the underlying composite phenomenon, they often fail to agree on the aggregation and weighing methods to be used. Due to the general methodological uncertainty and subjectivity revolving around the engineering of composite indicators, transparency plays a crucial role for their interpretability, coherence, and success (Munda & Nardo, 2003, p.13; Saltelli, 2006, p.66).

4.2.3 Key success factors of composite indicators

Leaning on Iasiello (2008), Bonafini (2013) states that the success of an indicator is measured by its “degree of constructive and appropriate use by its target audience” (p.23). While he points out six success factors of indicators in general (cf. subsection 2.1.3), the present subsection is intended to complete his list with five success factors specifically determined for composite indicators. Indeed, according to academic and expert literature, a composite indicator is more successful when:

1. It conveys information and impressions gathered from an opinion survey among stakeholders who are directly affected by the underlying composite phenomenon (Hák & Janoušková, 2012, p.93).
2. It is validated by renown experts and accepted without a public debate around its empirical or methodological legitimacy (Saltelli, 2006, p.69).
3. Key stakeholders, especially the intended users and technical experts, are included in the development process from the beginning (Iasiello, 2008, p.12). Their inclusion increases the acceptance rate and quality of the composite indicator significantly. Insiders with frontline experience provide information on special features and problems unknown and unattainable to statisticians (Saltelli, 2006, p.70). Because of all those subtleties which need to be taken into account, the construction of a composite indicator often “owes more to the craftsmanship of the modeler than to universally accepted scientific rules for encoding” (Saltelli, 2006, p.69).
4. It is flexible and can be adapted to changing stakeholder needs due to the evolution of environmental factors (Iasiello, 2008, p.13). If the users are allowed to customize the composite indicator by determining its weights, such as is the case with the OECD’s Better Life Initiative, the credibility, perceived legitimacy and acceptance of the tool usually increase (Hák & Janoušková, 2012, p.93).
5. It is linked to policy and decision making through the development of a list of recommendations for measures to be taken (Hák & Janoušková, 2012, p.93).

4.2.4 Composite indicator strengths and weaknesses

As mentioned above, the methodological assumptions underlying the construction of composite indicators are often controversial (cf. subsection 4.2.2). In some cases, their controversy is such that newly created composite indicators are published with a list of advantages and disadvantages (Cherchye et al., 2007, p.751). Similarly, this subsection highlights the strengths and weaknesses of composite indicators that need to be taken into account when conceptualizing the DRI.

The most commonly cited strengths of composite indicators are the following (Hák & Janoušková, 2012, p.33; Munda & Nardo, 2003, p.2; Nardo et al., 2008, p.13; Saltelli, 2006, pp.67-68):

1. Composite indicators are powerful communication tools. They are able to relay complex messages in the most simple and effective way. By stressing the bottom line and highlighting the big picture, composite indicators capture the interest of the media, the general public, and therefore also decision makers.
2. Composite indicators offer a framework with which complex and multidimensional issues can be effectively summarized and monitored.
3. Composite indicators reduce the visible size of indicator sets, making them more manageable for practitioners without necessarily sacrificing the level of detail regarding the underlying information base.
4. Composite indicators enable the ranking of entities on complex and multidimensional issues by using one single figure only.
5. Composite Indicators are designed so that the actions required to optimize their value contribute to the achievement of an overarching objective.

The most commonly cited weaknesses of composite indicators are the following (Franceschini et al., 2008, p.140; Iasiello, 2008, p.10; Munda & Nardo, 2003, p.2; Nardo et al., 2008, p.13; Saltelli, 2006, pp.68-69; Zhou et al., 2010, pp.360-364):

1. The usefulness of a composite indicator depends greatly on the underlying construction scheme. Particular attention needs to be paid to the controversial topics of data weighing and aggregation, as small changes have the potential to greatly affect the output. Those methodological difficulties render composite indicators vulnerable to manipulation, thereby raising constant concerns about their reliability, accuracy, and ability to avoid distorted findings which could send misleading policy messages or invite simplistic conclusions.
2. When a composite indicator is designed to simultaneously inform decision makers, engage the media, educate the public, and increase accountability, there is a risk of completing one or more of these tasks unsatisfactorily.
3. Composite indicators are said to increase the amount of data to be collected as all sub-indicators must first be statistically significant before they can be assembled. This additional effort in data collection and formatting is sometimes perceived to be wasted as the preliminary work ends up drowned in a single, aggregated, and not always well defined figure.
4. There is more room for disagreement among competing entities when it comes to recognizing the validity of a composite indicator rather than single indicators.
5. The whole composite indicator may become irrelevant if some dimensions needed to holistically address the underlying composite phenomenon are left out because of technical difficulties or carelessness.

4.3 The differentiation and monetization potentials of the DRI

This section compares the characteristics of the DRI to the ones of nine other existing indicators in order to assess the DRI's differentiation and monetization potentials (cf. appendix A). The selected indicators are segmented into two groups. The first group encompasses three best practice composite indicators. The Ecological Footprint and the Human Development Index have been selected because they are two of the internationally most frequently cited composite indicators (Hák & Janoušková, 2012, p.98). The Global Competitiveness Indicator was selected because it is published by the WEF which is known as *the* institution that deals with the topic of competitiveness. It is of interest to the present study because the DRI focuses on the topic of demographic competitiveness (Tošović Stevanović, 2011, p.409).

The second group includes six demographic indicators, of which three - the Work Ability Index, the Demographic Risk Map, and the Demographic Fitness Index – were previously mentioned by Bonafini (2013, pp.25-27). These selections are supplemented by three other publicly available demographic indicators or indicator sets, including the Global Age Watch Index and the Active Ageing Index, as well as the population indicators from the Swiss Federal Statistical Office (SFSO). While the first group is used solely to assess the monetization potential of the DRI, the second group provides insights regarding both its differentiation and monetization potentials.

The monetization potential of the DRI

Among the nine indicators, three possible financing alternatives have been identified. First, the indicator may be financed by private corporate funds, as is the case for the Global Competitiveness Index, the Demographic Fitness Index, and the Demographic Risk Map. Second, the indicator may be financed by an organization relying mainly on donations, as is the case for the Ecological Footprint. Third, the indicator may be financed by organizations relying on public funds, as is the case for the Human Development Index, the Work Ability Index, the Global Age Watch Index, the Active Ageing Index, and the population indicators of the Swiss Federal Statistical Office. As Vincent Willi from the SFSO mentioned twice during the expert interview that the Swiss Confederation does not fund externally published indicators (cf. subsection 6.2.3) and that it might be difficult to collect donations to publish an indicator primarily targeted at users from the private sector, the most viable funding option remaining for the DRI appears to be corporate funding.

The differentiation potential of the DRI

With its unique purpose, the DRI differentiates itself from the other six other demographic indicators analyzed in this section. The population indicators of the Swiss Federal Statistical Office and the Demographic Risk Map offer data to assess the demographic structure and markets dynamics. The Work Ability Index monitors the working capabilities of older employees within an organization. The Demographic Fitness Index was discontinued and

used to focus solely on human resources issues (cf. section 2.2). Finally, the Global Age Watch Index and the Active Ageing Index, both aim at assessing the quality of life of the elderly. Therefore, it appears that the DRI has a unique positioning as a management tool that monitors and helps improve the level of preparedness of companies, industries, and the country as a whole when addressing the effects of population ageing on the Swiss economy.

4.4 Takeaways from the indicator perspective

The balanced scorecard approach to management provides best practices which are transferable to the DRI concept. Both instruments are strategy implementation tools that use indicators to measure a composite underlying phenomenon in a holistic way. However, while the balanced scorecard deals with the overall organizational performance, the DRI focuses on how the organizational performance is affected by population ageing. Three insights are transferable in particular. First, developing causal links between single dimensions and the overall organizational performance increases the organizational members' efficacy when dealing with those dimensions. Second, taking a holistic approach to performance measurement with leading indicators helps foresee future financial impacts. Third, the DRI must not only be used as a performance management tool, but also as an incitement for discussing the assumptions underlying the organizational strategies (cf. section 4.1).

The DRI can be expected to accrue more benefits from adopting the format of a composite indicator than the set of indicators option due to the aforementioned tool's communicative power. The composite indicator creation and publication would be timely as it would follow a trend of recently created and quite successful socio-economic composite indicators (cf. subsection 4.2.1). To cope with methodological uncertainties and increase its likelihood of adoption, a broad selection of stakeholders ought to be involved in the DRI development process (cf. subsection 4.2.2 and 4.2.3). Because of its vocation as a multipurpose instrument, the DRI must be carefully designed to assure that it conveys relevant information at every aggregation level; whereas the lower levels should have priority if trade-offs must be made (cf. subsection 4.2.4). The DRI proposed in section 2.2 would adopt a unique positioning and, according to the prevailing standards, ought to be financed directly or indirectly by its corporate users (cf. section 4.3).

5. The DRI as a tool for business interest associations

Population ageing is a multidimensional phenomenon which raises complex issues for all employers active in the market. However, according to Clark and Ghent (2010), “relatively few employers have adopted demographic techniques to project their future labor force and indicate the need for policy shifts to achieve the optimal size and age structure of their labor force” (p.66). Not surprisingly, the fragmented efforts made by the few employers who have been active in that field have not yet sufficed to induce the needed policy shifts. Population ageing is a systemic problem that requires a systemic approach. This is why business interest associations (BIAs), who possess the scale, purpose, and systemic relevance needed to trigger policy changes, could play a critical role in helping ensure the demographic sustainability of their members.

This chapter therefore discusses the topic of BIAs. The first section introduces the concept of BIAs. The second section describes the Swiss BIA ecosystem. The third section analyzes the political and economic impact of BIAs. The fourth section enumerates the reasons for the recent decrease in influence and popularity of BIAs. The fifth section summarizes the implications of the BIA perspective for the DRI.

5.1 An introduction to BIAs

BIAs are collective bodies which provide services to their member organizations and which take joint action with the aim to improve the economic, social, and political situation and influence of their member organizations (Boleat, 2001, p.5; David, Ginalski, Mach, & Rebmann, 2009, p.4).

The most common form of a BIA is the single industry association or sectorial association, which generally groups the businesses of a specific economic sector. These sectorial BIAs are then grouped into peak-level associations which are sometimes called federations. In both cases, the BIAs share at least three common characteristics (Boléat, 2003, pp.1-3):

1. Their members are organizations.
2. Their members elect the board of directors and expect it to preserve their interests.
3. Their members share common interests.

According to David et al. (2009), it is the logic of membership and influence that lie at the core of the BIA concept.

The logic of membership

BIAs have to clearly define and articulate interests with which potential members can identify and are critical enough for them to join the BIA. As BIAs have a self-help and self-regulatory purpose, their success depends on the cohesion and cooperation of their members who are expected to comply with the decisions made on their behalf. The often diverging interests and priorities of their members therefore need to be carefully managed and balanced (David

et al., 2009, pp.3-4). An additional challenge is that many of the members understand their roles as clients rather than contributors. As a result, the members tend to judge BIAs solely based upon the quality of the services delivered in the short-term instead of giving the BIAs the required leeway to pursue long-term strategies (von Schnurbein, 2009, pp.104-105). Whether in the short-term or over the long-term, with their pooled resources and large networks, BIAs are able to offer services of significant added value to their members. The ones most commonly found in the literature are summarized as follows (Boleat, 1996, p.3; Boléat, 2003, pp.1,84,120-121; David et al., 2009, p.4; Eichenberger, Guex, Humair, & Mach, 2013, p.7; von Schnurbein, 2009, p.98):

1. Know-how dissemination through vocational training, continued training, and topical conferences,
2. Information building and sharing through industry statistics and market analyses,
3. Research and development coordination,
4. Productivity improvement through business process innovation,
5. Product quality improvement through the establishment of technical norms, internal controls, and labels,
6. Market entry coordination and the protection of existing markets, and
7. Many other services including legal advice, employee recruitment, bulk purchases, networking opportunities, membership directories, and press coverage.

The logic of influence

BIAs represent the interests of their members towards external stakeholders. In order to do so effectively, they are keen to vehicle a trustworthy reputation, provide accurate intelligence, and propose or support evidence-based policies. In contradiction to popular beliefs, the act of lobbying, for which what is said is typically less important than whom it is said to and how it is said, seems to represent only a small fraction of the work done by BIAs. Their two main levers of action, as identified in the literature, can be summarized as follows (Boléat, 2003, p.89; David et al., 2009, p.4; Eichenberger et al., 2013, p.7; Oesch, 2007, p.350):

1. Dealing with other socio-economic actors. This comprises collective bargaining which regulates the relationship between employers and employees, the building of privileged relationships with capital providers, as well as the purposeful use of public relational tools and media to inform and influence the public opinion.
2. Influencing the decisions made by the legislative and executive arms of government. This is one of the principal sources of legitimacy for BIAs. Some of the most important topics for this lever of action are the labor market regulation, international trade treaties, infrastructure investments, and the delimitation of public services. In Switzerland, the main official channels through which BIAs are allowed to exert their influence on government are extra-parliamentary expert commissions, parliamentary expert committees, and the consultation process.

5.2 The Swiss BIA ecosystem

Based on its historical particularities, every country developed a somewhat unique BIA ecosystem. According to the literature, the Swiss BIA ecosystem showcases the following characteristics (Boleat, 1996, p.4; Boléat, 2003, pp.2-3; Eichenberger et al., 2013, pp.7,14-15):

1. BIA adherents follow a location-based and sectorial logic. Most of the companies from the primary, secondary, and tertiary sector in Switzerland belong to a regional chamber of commerce in charge of promoting local trade, as well as to a sectorial BIA which is established at national level.
2. The division of labor between regional or sectorial BIAs and their peak-level associations is based on their structural strengths. The peak-level associations, on the one hand, are typically in charge of the strategic and political tasks in order to promote the macroeconomic interests of their members on the federal level. They also perform an important mediating role when the interests of their members diverge in order to preserve internal cohesion. The regional and sectorial BIAs, on the other hand, provide most of the direct services to their members and negotiate the collective bargaining agreement for their sector.
3. While certain BIAs perform both roles, in many cases, there is a division of labor between employers' associations and trade associations. The former are specifically created to support their members with tasks relating to collective bargaining issues and employment services. The latter focus on the economic development of their industry and region.

There are several hundred BIAs in Switzerland, whereas the exact number is unclear as there is no official Swiss BIA directory. According to Swiss standards, a BIA with less than 100 members is small, whereas a BIA with more than 1'000 members is considered large. The economic, political, and social influence of BIAs varies according to their size and to the perceived national importance of the business sector they represent (von Schnurbein, 2009, pp.98-102). According to Martin Kaiser from the Swiss Employers' Association (cf. appendix C), the most powerful Swiss sectorial BIAs are the ones whose members are active in the electrical and mechanical engineering, banking, insurance, pharmaceutical, and chemical sectors. The different sectorial BIAs of the Swiss economy are represented in a highly inclusive way by a small group of peak-level associations. Therefore, within a single peak-level association, members with all kinds of sectorial activities, company sizes, and ownership types can be found (David et al., 2009, p.5).

The Swiss BIA structure is dominated by three national peak-level associations. Firstly, big industry, trade, and services, on the one hand, are organized within the trade association Economiesuisse and the employers' association Swiss Employers' Association (SEA) (Eichenberger et al., 2013, p.13). Both BIAs can be regarded as complementary associations

as they represent the similar business interests. The SEA deals primarily with employee relations and social insurance, whereas Economiesuisse focusses on economic and financial issues (David et al., 2009, pp.5-6). On the other hand, small and medium industry, arts and crafts, as well as small trade are organized within the trade association Swiss Union of Small Businesses, which is not complemented by a peak-level employers' association, and therefore also deals with the employment-related topics (David et al., 2009, p.6; Eichenberger et al., 2013, p.13).

5.3 The political and economic impact of Swiss BIAs

BIAs can play a more or less important role in the economic organization of a country. In liberal market economies such as that within the United States of America, they play a less important role as market mechanisms are relied upon to tackle coordination problems between market participants. The government and the BIAs are expected to hold back from interventionist behavior.

In coordinated market economies such as Switzerland's, also referred to as corporatist or cooperative market economies, BIAs play a distinctively more important role as they are responsible for actively coordinating their members, especially with regard to standard-setting, technology transfer, and vocational training. Government and market participants form an implicit contract by accepting the moderating role of BIAs, which hence become economic, social, and political regulators. In such a setting, the government does not just share its policy making prerogatives by informally incorporating BIA inputs. Instead, it leads official negotiations with the BIAs on certain issues and grants them leeway for self-regulation on others (Afonso & Papadopoulos, 2013, p.7; David et al., 2009, pp.1-4). It is therefore not surprising that the predecessor of Economiesuisse, the Swiss Union of Trade and Industry, is widely regarded as the "most influential actor in Swiss politics during the 20th century" (David et al., 2009, p.5).

Two historical developments have been particularly important in establishing the importance of BIAs for the Swiss economic and political system. First, national BIAs were established during the last decades of the 19th century before the fragmented cantonal political parties had had the time to properly consolidate and gain power at the federal level. As a result, by outplaying weaker political parties in the federal policy making process, BIAs have begun playing a major role in drafting economic and social policies since the beginning of modern Switzerland's history. Second, due to the purposefully lean central administration of the Swiss federal state, the Swiss government has always been keen on including the BIAs in the political decision-making process and on subsidizing them to undertake social and economic tasks of public interest. To sustain that collaboration over the years, BIAs and the government have built strong relationships based on mutual trust and alternating concessions (Afonso & Papadopoulos, 2013, p.19; David et al., 2009, p.5). Traditionally, self-

regulation, popular referenda, and extra-parliamentary commissions have been the three instruments most used by BIAs to exert their influence on the Swiss economy and political system.

Self-regulation

Throughout the 20th century, BIAs served as a platform for the members of the small and concentrated Swiss economic elite to meet, align their interests, and coordinate their activities. It was to maintain the power of the elite by avoiding external intervention that BIAs have traditionally sought to adopt self-regulation mechanisms. The advantages of self-regulation for BIAs are twofold. First, the resulting agreements are confidential, which makes it almost impossible for the political Left to politicize issues and to influence the outcome of economic and social policies. Second, such arrangements are comparatively flexible and can be adapted to changing needs more swiftly than legislation (David et al., 2009, pp.7,16,28; Eichenberger et al., 2013, p.16).

Popular referenda

Due to their large size and extensive financial resources, Swiss peak-level BIAs can always be counted on to launch a popular referendum should they stand under the impression that the interests of their members are threatened by the legislators (Humair, Guex, Mach, & Eichenberger, 2012, p.118). In the Swiss semi-direct democratic system, popular referenda are a way to contest newly enacted laws and, if successful, to have the legislator repeal them. With the help of this political tool, BIAs secured themselves the de facto role of veto players in the Swiss legislative system. This strongly incentivizes the national government to consider BIA interests in policy making process as early as possible (Afonso & Papadopoulos, 2013, p.13). It is therefore not uncommon for the Swiss government and BIAs to reach a corporatist compromise and agree on policies in the early stage of their process (Afonso & Papadopoulos, 2013, p.21).

Extra-parliamentary commissions

Since their inception, the Swiss BIAs have always significantly contributed to the preparation of legislation in extra-parliamentary commissions. Those commissions are organs which work on tasks defined by the federal administration, but which do not include any civil servants. Their purpose is twofold. First, they provide expert knowledge at minimum cost to address punctual tasks requiring a high degree of specialization. Second, they act as meeting places for the members of the Swiss elite and allow them to discuss their diverging interests and to reach compromises thereby facilitating the ensuing legislative process. Due to their relatively strong influence, critics have described the extra-parliamentary commissions as a militia administration providing a shadow parliamentary system (David et al., 2009, pp.7-8).

5.4 The recent decrease in influence and popularity of Swiss BIAs

Affected by the advancement of globalization since the 1980s, the Swiss economy has started to shift towards a more liberal and less coordinated structure. Due to the intensifying international economic competition and the increasing heterogeneity of local economic interests, BIAs have been losing influence among the Swiss economic elite and political stakeholders. With their central role in the political and economic system challenged, Swiss BIAs – especially peak-level associations – have therefore been forced to restructure their organizations, intensify their cooperation, and refocus their activities since the 1990s.

The aim of these aforementioned changes was to achieve higher organizational efficiency and to unify the communication with external stakeholders. The most significant shake-up of the existing structures has without doubt been the emergence of Economiesuisse in the year 2000, which was founded by a merger between the Swiss Union of Commerce and Industry and the Society for the Promotion of the Swiss Economy (Afonso & Papadopoulos, 2013, p.21; David et al., 2009, pp.27-29; Oesch, 2007, pp.351,356). Besides international economic competition and the fragmentation of economic interests induced by globalization, six additional recent occurrences have also noticeably contributed to the downfall of BIAs.

The growing obsolescence of extra-parliamentary commissions

The involvement of BIAs in extra-parliamentary commissions - the most important Swiss political organs of the 20th century - has been decreasing in recent decades. The total number of existing extra-parliamentary commissions has declined from 200 in 1980 to 122 at present. In fact, many commissions have been closed due to the deterring criticism expressed by Swiss citizens regarding the opacity of those structures as well as to the internationalization of the economy which made it less important for BIAs to influence the extra-parliamentary commissions because of their almost exclusive domestic focus (David et al., 2009, pp.25-29; Oesch, 2007, p.351; Swiss Confederation, 2014).

The replacement of banks by financial markets as sources of corporate funding

Throughout the major part of the 20th century, banks were the most important source of financing for the industrial companies in Switzerland. The BIAs served as informal platforms where both sides could meet and discuss business opportunities. However, with the industrial companies increasingly turning towards financial markets since the 1980s, this aspect of the traditional market coordination mechanism was lost. Therefore, the incentive of many companies to be represented on the boards of BIAs subsequently decreased (David et al., 2009, p.21; Eichenberger et al., 2013, p.16).

The tightening market conditions

Since the 1990s, the deterioration of public finances, slow economic growth, and higher unemployment have been enhancing distributional conflicts, thereby rendering successful market coordination increasingly difficult (Afonso & Papadopoulos, 2013, p.21; Oesch, 2007, p.351). In addition, as the membership fees are typically calculated relative to the size of the

member in question, especially the largest companies become increasingly unwilling to pay their dues and start questioning the cost-efficiency of the BIAs during recessionary periods (Boléat, 2003, pp.71-72; David et al., 2009, p.24).

The incompatibility of neo-liberal ideas and market coordination

In the early 1990s, an informal group assembling the leading Swiss economists and representatives of the largest Swiss companies formed a neo-liberal coalition which heavily criticized the BIAs. Their critique concerned the inclination of BIAs to make concessions to political actors. They argued that by doing so, BIAs hindered innovation and actively contributed to the deterioration of the competitiveness of the Swiss economy. This coalition went on to create the neo-liberal think tank Avenir Suisse in the year 2000 (David et al., 2009, p.23; Oesch, 2007, p.363). Influenced by their neo-liberal ideals, antitrust laws have been founded. Additionally, the willingness of BIA members to be bound by collective agreements has decreased strikingly over the last decades, thereby making the work of BIAs as social regulators increasingly difficult (Oesch, 2007, pp.357-358).

The professionalization of the federal parliament and the polarization of Swiss politics

The Swiss BIAs gained considerable political power at the expense of the federal government by effectively coordinating the wartime economy during the Second World War (David et al., 2009, pp.19-20). This advantage lasted until the 1990s, when the federal parliament started to undergo stringent professionalization measures with the aim to regain more influence in the legislative process (David et al., 2009, p.25). At the same time, with the rise of the right-radical Swiss People's Party, the center-right parties - the traditional allies of the BIAs - started to feel increasingly squeezed in the midfield of Swiss politics (Afonso & Papadopoulos, 2013, p.19). Consequently, they started to align themselves with the Swiss People's Party, thereby rendering the left-right compromises needed for BIA policies to be implemented nearly impossible (Afonso & Papadopoulos, 2013, p.22; Oesch, 2007, p.351).

The increasing relevance of transnational BIAs

Globalization diminished the dependency of companies active in Switzerland on the Swiss BIAs (David et al., 2009, p.26). Instead, transnational BIAs increasingly started to capture the focus of the largest Swiss companies (David et al., 2009, p.22). Starting in the 1980s, many became tightly involved in European and global interest and policy groups. The political development of the European Union contributed to important regulatory changes as well with many decisions affecting the Swiss market taken outside the present realm of influence of Swiss BIAs. For Swiss companies, international lobbying is growing in importance at national lobbying's expense (Boléat, 2000, p.3; David et al., 2009, p.22).

5.5 Takeaways from the BIA perspective

Despite their historical importance, external and internal changes have caused BIAs to increasingly lose influence on the Swiss economy and political system (cf. section 5.4). However, according to Oesch (2007), even in the face of past and ongoing restructuring, the traditionally stable BIAs are still firmly anchored in the Swiss economic and political spheres, and cannot be expected to vanish from the Swiss landscape anytime soon (p.359). They maintain an important right of voice in matters of economic policy, and remain the chief vindicators of their members' aggregated interests (von Schnurbein, 2009, p.98). According to David et al. (2009), companies will still have a selective incentive to join because of the quality services they receive from BIAs, even in case of a further degradation of BIAs' political influence (p.27). Overall, there is a consensus in the literature that Swiss BIAs will sustain despite their present difficulties, while there is also the clear perception that roles are shifting and that their legitimacy increasingly revolves around providing their members with a range of unique quality services.

In order to confirm these insights, a media review was conducted (cf. appendix B). The opinions conveyed by the newspaper articles were consistent with the ones identified in the literature review above. Particular emphasis was put on the need for BIAs to provide exclusive services to their members. Another recurrent theme was the growing lack of credibility of BIAs – especially of peak-level associations – which hinders them from effectively influencing the public opinion. This lack of credibility is substantiated with the group's recent political defeats as well as with the more general claim that BIAs are increasingly disconnected from the social and political reality in the field.

This is precisely where the synergies resulting from the mutually beneficial partnership between the DRI and the BIAs could come into play. While the DRI needs a nodal point at industry levels that enables the efficient dissemination and aggregation of questionnaires, BIAs ought to be keen on new opportunities to offer distinctive services to their members. With the increasing internationalization of the economy, the relevance of national BIAs for policy making and sectorial coordination is decreasing (cf. subsection 5.4). With the DRI, instead of giving their members a tool to help them achieve their global ambitions, Swiss BIAs can provide them with an instrument allowing them to strengthen their base by proactively addressing the effects of population ageing within Swiss organizations.

6. Empirical research

This chapter documents the empirical part of the master's thesis. It aims at understanding the manifested need, perceived interest, important themes, and expected usefulness of the DRI for its key stakeholders, as well as assessing the overall feasibility of the DRI defined in section 2.2. This portion is divided into three parts. The first section describes the overall research design. The second section details its qualitative strand⁷. The third section reviews its quantitative component.

6.1 Research design

As the basic DRI concept and research design were jointly developed by the author of the present thesis and Bonafini (2013), this thesis uses the same research methods and structure as Bonafini's. This is done to enhance the consistency and comparability of the empirical research of both papers. Therefore, a mixed methods research design is adopted which integrates "qualitative and quantitative research within a single project" (Bryman & Bell, 2007, p.642). While the qualitative strand helps refine the DRI concept and gain contextual information, the quantitative strand provides generalizable results which can be appraised with the help of statistical tools. This design therefore allows for a combination of the complementary strengths of both constituents and provides a setting where corroborating results are used to confirm each other, whereas contradicting ones are identified for further investigation (Miles, Huberman, & Saldaña, 2014, p.43).

Even though the mixed methods research design is said to "provide a better understanding of a phenomenon than if just one method had been used" (Bryman & Bell, 2007, p.658) by combining exploratory and confirmatory findings (Johnson, Onwuegbuzie, & Turner, 2007, p.116), it has both detractors and proponents. Its detractors, on the one hand, view it as a methodology based on two incompatible epistemological assumptions - the constructivist approach behind qualitative research versus the positivist one behind quantitative research (Bryman & Bell, 2007, p.643; Creswell & Plano Clark, 2011, p.74; Flick, 2006, p.34). Its proponents, on the other hand, view it as a method legitimized by the practical benefits of its mixed data collection and analysis techniques (Bryman & Bell, 2007, p.644; Creswell & Plano Clark, 2011, p.5). This pragmatism, where the utilizable output of research is emphasized over methodological disputes, increasingly prevails among researchers (Creswell & Plano Clark, 2011, p.60; Flick, 2006, p.41; Kvale, 2007, p.47).

⁷ "A strand is a component of a study that encompasses the basic process of conducting quantitative or qualitative research: Posing a question, collecting data, analyzing data, and interpreting results based on that data" (Creswell & Plano Clark, 2011, p.63).

The approach followed for this study

This master's thesis uses an exploratory sequential design, where qualitative data is collected and analyzed in the first phase, followed by a quantitative phase, aimed at testing and generalizing the qualitative findings (Creswell & Plano Clark, 2011, p.71). The study uses a sequential timing because the strands are implemented "in two distinct phases, with the collection and analysis of one type of data occurring after the collection and analysis of the other type" (Creswell & Plano Clark, 2011, p.66). Of the two phases, the focus is put on the quantitative phase because the "first step and its results are only seen as preliminary" (Flick, 2006, p.35). As such, the present design can be further categorized according to the literature as an exploratory sequential quantitative dominant design (Creswell & Plano Clark, 2011, p.71; Johnson et al., 2007, p.124; Leech & Onwuegbuzie, 2007, p.271).

The qualitative strand consists of expert interviews. With their broad scope, they allow the collection of contextual information required to complement the desk research, refine the DRI concept, and design the quantitative strand of research (Flick, 2009, p.166). In the quantitative aspect, data is collected using the method of internet-mediated, self-administered questionnaires and used to test the formulated hypotheses as well as to provide additional exploratory findings (Johnson & Onwuegbuzie, 2004, p.19). The direct interaction resulting from mixing the two strands during the research process calibrates the collection of data of the second strand based upon the results of the first, particularly with regard to sampling choices and the specification of research questions (Creswell & Plano Clark, 2011, pp.66-67,74).

The applied design adopts the features of a fixed mixed methods research approach, as the use of the two strands is planned at the beginning of the research process and implemented without modifications (Creswell & Plano Clark, 2011, p.54). The expert interviews were conducted in French and German, whereas the questionnaire was written in German only. Two measures were taken in order to avoid the loss of meaning when the research results were translated into English. First, the integral research process was undertaken by only one person, covering all tasks from the creation of the research design to the evaluation of the results (Saunders, Lewis, & Thornhill, 2009, p.386). Second, the translated quotes (cf. subsection 6.2.3) were reread and if necessary corrected by the interviewed experts.

Reasons for using a mixed methods research design

The mixed methods research design was selected because it is the most adequate to answer the research questions of the present thesis. It allows for a broad collection of contextual information before focusing on specific insights and testing the generalizability of the findings. Among the many advantages cited in the literature, five in particular - completeness, contextualization, internal development, significance enhancement, and triangulation - have contributed to the selection of the mixed methods research design.

The completeness of the results is increased due to the more comprehensive account of the object under study gained by combining two research methods (Bryman, 2006, pp.105-107). The breadth and range of inquiry is extended by “using different methods for different inquiry components” (Greene, Caracelli, & Graham, 1989, p.259).

The environment is more comprehensively accounted for due to the qualitative research providing a contextual understanding followed by the generalization of externally valid findings by means of a questionnaire. With the resulting confirm and discover pattern, hypotheses generated using qualitative data are tested with quantitative data within the same study (Bryman, 2006, pp.105-107).

Internal development allows for the results of one strand to help develop or inform the other strand, particularly when it comes to the sampling of respondents and implementation procedures (Bryman, 2006, pp.105-107; Greene et al., 1989, p.259).

Significance enhancement occurs due to the collection of complementary data which enhances the illustration, clarification, and interpretation of the findings, where one method is used to help explain the findings of the other (Greene et al., 1989, p.259; Johnson et al., 2007, p.116).

Finally, triangulation analyzes the correspondence and convergence of results gathered from different method strategies in order to cross-check the findings (Bryman & Bell, 2007, p.646; Greene et al., 1989, p.259). In the present case, triangulation as such cannot be applied as the qualitative research was used to generate the hypotheses subsequently tested in the quantitative research, thereby rendering the results interdependent. However, since most of the quantitative results corroborate the qualitative, the validity of the results is nonetheless increased (Bryman & Bell, 2007, p.648).

6.2 Qualitative research

This section provides an overview of the qualitative strand of the research design. The first subsection examines the research method, sampling, and data collection. The second subsection explains the data analysis. The third subsection summarizes the qualitative results and contributes to the generation of hypotheses to be tested in the quantitative strand of this study.

6.2.1 Method, sampling, and data collection

Johnson and Onwuegbuzie (2004) explain that qualitative research is particularly valued by scholars because of its exploratory power and ability to generate hypotheses (p.18). In fact, qualitative research is commonly used to help with the structuring of the thematic and the conceptual development of a framework in the preliminary stage of a study, especially if the

object under study is new (Flick, 2009, p.166; Johnson et al., 2007, p.115). According to the literature, the qualitative research method most suitable for such exploratory work is expert interviews, which is why it has been chosen for the qualitative strand of the present research design (Flick, 2006, p.40). Experts are defined as particularly competent persons who dispose over “technical process oriented and interpretive knowledge referring to their specific professional sphere of activity” (Bogner & Menz, 2002, p.46) and who are perceived to be authorities in their fields of occupation (Flick, 2009, p.165).

By definition, expert interviews focus on the expertise and special knowhow of the interviewee, rather than the person themselves (Meuser & Nagel, 2010, p.377). The objective of the interviews within the present thesis was to collect the experts’ opinions on the industry-level DRI rationale, and to use their process and context knowledge to supplement the insights gained through desk research and finalize the design of the quantitative questionnaire. For that purpose, a semi-structured interview format with open-ended questions was adopted, thus enabling the interviewees to freely express themselves and to contribute inputs not previously considered by the interviewer.

The interviews followed the structure of an informal interview guide which had been prepared in advance, but not shown to the interviewees (cf. appendix D). The main function of this script was to provide a coherent sequence of themes, ensure that all the relevant topics were covered, exclude unproductive topics, and allow for effective time management (Flick, 2006, p.165; Meuser & Nagel, 2002, p.77). The interview guide was designed according to the guidelines proposed by Kvale (2007) and therefore includes a thematic dimension - an outline of topics to be covered - as well as a dynamic dimension - a list of suggested questions for every topic in order to ensure the flow of the conversation (pp.56-57).

The questions were short, specific, and unambiguous. Depending on the expert’s field of competence, certain questions were dropped while others were deepened, and the structure of the interview guide was sometimes disregarded in order to follow up on specific answers (Kvale, 2007, p.51). The interview guide was created in line with Bonafini’s (2013) version (pp.58-59), whereas the topics and questions were adapted to help establish the perception and evaluation of the industry-level DRI rationale from the perspective of the interviewee (Kvale, 2007, p.52). The interview guide was improved after every interview.

Interviews were conducted between March 1 and March 20, 2014 from the purposeful sample of five Swiss experts (Creswell & Plano Clark, 2011, p.89). The five experts were contacted by e-mail during the two last weeks of February 2014. They were carefully selected from the fields of business interest associations, national politics, federal and cantonal administration, and statistics (cf. appendix C) where they hold significant positions in their respective organizations. Additionally, these particular organizations are also key stakeholders for the industry-level DRI. All five contacted experts replied to the invitation and agreed to schedule an interview. The interviews were conducted over phone or during

personal meetings and were recorded with the permission of the interviewees. They lasted between 30 and 60 minutes, whereas the first two minutes were spent discussing the terms of confidentiality and disclosure.

6.2.2 Data analysis

The data evaluation of the expert interviews was carried out according to the *qualitative content analysis* method, which is the most prevalent approach for qualitative text analysis (Bryman, 2004, p.392; Flick, 2006, p.312). This research method is based on the “subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p.1278). According to Elo and Kyngäs (2008), “the aim is to attain a condensed and broad description of the phenomenon [under study]” (p.108).

Following the three step sequential model proposed by Mayring (2000) and summarized by Kohlbacher (2006), the specific approach chosen for this thesis was based on the three distinct analytical procedures of summarizing, explaining, and structuring (Kohlbacher, 2006, p.16; Mayring, 2000, pp.3-5). All five interviews were partially transcribed shortly after their recording in order to maximize accuracy. In the first phase, the transcribed text was paraphrased into succinct and denser key passages, thereby creating “a manageable corpus which still reflects the original material” (Kohlbacher, 2006, p.16). During this condensation process, representative quotes were identified and collected for illustrative purposes (Creswell & Plano Clark, 2011, p.188). The reliability of expert data was also verified in order to confirm the experts’ credibility and to ensure the validity of the conclusions based on the data analysis (Dorussen, Lenz, & Blavoukos, 2005, p.334).

In the second phase, short key passages were coded according to their domain of content and linked to the contextual knowledge gained through desk research by means of annotations (Kohlbacher, 2006, p.16). In the third phase, the codes were grouped into broader themes, thereby uncovering the underlying essence of the expert interviews (Creswell & Plano Clark, 2011, p.188). “Paraphrases with the same meanings [were] skipped and similar paraphrases [were] bundled and summarized ... on a higher level of abstraction” (Flick, 2006, p.313). Thanks to this process of meaning categorization, the content of expert knowledge could be compared between respondents (Flick, 2006, p.165).

6.2.3 Results and hypothesis generation

Summarized below, the results of the expert interviews coincide to a large extent with the assumptions underlying the DRI rationale formulated in section 2.2. With the insights gained through desk research, they serve as hypotheses to be tested in the quantitative strand of this study.

a. Awareness and relevance

All five interviewed experts were aware of the population ageing megatrend in Switzerland. They agreed that the topic was highly politically and economically relevant and that rapid measures needed to be taken. Population ageing is a recurring topic at Swiss BIAs and government debates, whereas the most pressing issues seem to be the provisions for old age as well as to a slightly lesser degree the threatening national shortage of skilled labor due to the ageing and shrinking workforce.

“Population ageing is a pressing issue which needs to be addressed by finding ways to better use the human capital available within Switzerland. Among other factors, the solution encompasses an increased participation of older employees and women in the workforce as well as the training of skilled labor”, Nadine Masshardt, Swiss National Council.

b. Risk and impact assessment

Demographic statistics are not included in the MONET system of national indicators which measures the sustainable development of Switzerland. Hence, the consequences of an ageing population for the Swiss sustainability are not assessed by national statistics.

“The reason for demographic change not being included in the system is not that it has been excluded, but rather that it has never been considered”, Vincent Willi, SFSO.

Meanwhile, several institutions have published white papers on the topic of population ageing, but their fragmented efforts focus on proposing generic solutions rather than quantifying the risks and impacts of this megatrend. Due to the resulting lack of specific data, the stakeholders at industry and national levels typically rely on a combination of sources including BIA and expert studies, media researches, and public statistics to achieve education around the topic. While all five experts appeared to be equally well-informed on the labor supply and public finances related population ageing issues, it was the BIA experts who were most aware of the changes in product and service demand of ageing customers.

„Measured by wealth, 15 percent of the retirees in Switzerland are millionaires. Adding value to the services provided to this customer group is crucial for any company intending to secure itself a share of the lucrative silver market”, Martin Kaiser, SEA.

c. Existing practices

Despite the experts' categorization of population ageing as a relevant and pressing issue, only a few concrete measures aimed at addressing its effects on the Swiss economy appear to have been taken thus far. The experts agreed that a tool offering guidance for decision and policy-makers on how to tackle the population ageing issue in a comprehensive way is missing. The existing indicators are mainly used to address capacity issues. Not enough attention is paid to the impact of a changing demographic structure on the competitiveness of Switzerland.

“We use demographic indicators in order to predict the need for future school infrastructure in our canton, that's it”, Reto Givel, canton of Zurich administration.

Among the precursors in the field, the SEA is planning an online platform that would allow companies to share best practices on how to thrive with employees of 45 years and older and to gain an overview of the fragmented initiatives which already exist throughout the economy. The SEA has also published two white papers addressed at companies and policy-makers on the topics of shrinking labor supply, ageing workforce, retirement, workforce feminization, and international workforce migration. The position defended by the SEA is that the talent war for young employees cannot benefit the economy as a whole and that the marginal benefits of increasing the percentage of women and foreign employees in the workforce is decreasing rapidly. Therefore, the most can be gained by retaining older employees of both genders in the workforce until they are 65.

“Swiss companies typically don't have a proactive attitude towards older employees, a change of paradigm must occur”, Martin Kaiser, SEA.

d. DRI: interest and potential

None of the experts had previously heard of an indicator similar to the DRI or of a BIA offering a comparable service to their members. The general feedback was positive as the experts agreed that the DRI had the potential to become a useful tool for evidence-based management and policy making. As long as transparency was warranted, they did not perceive the BIA involvement to be an issue. Meanwhile, the experts also said that they needed further specifications on the design and content of the indicator to be able to evaluate its usefulness more accurately.

“The monitoring of demographic pressures through the corporate lens is an interesting change of perspective that could make the DRI unique and relevant”, Vincent Willi, SFSO.

Composite indicators are generally perceived to be powerful communication tools, but to become truly useful, they need to be accompanied by recommendations for measures. Nadine Masshardt, Swiss National Councilor, added that to be credible, the recommendations would have to be supported not only by BIAs, but also by employees' unions. Should both types of organizations be able to agree on common recommendations, the acceleration of the ensuing political process would considerably increase.

However, the experts also expressed doubts on whether the DRI concept could be successfully implemented. Some of them were worried that the expected financial impact at a corporate level of managing the effects of population ageing might be too low for companies to participate in the DRI surveys regularly. Another returning concern was that the DRI might lack the flexibility to address the heterogeneous needs of Swiss companies which based on their different products, services, employees, and clients are all diversely affected by population ageing. In addition, Martin Kaiser from the SEA highlighted that his

organization would not welcome an unfruitful debate about quotas triggered by the DRI. Finally, Reto Givel from the administration of the canton of Zurich suggested that instead of the DRI, a more flexible service could be offered in the shape of an online tool. This tool could be complemented by workshops and consulting services, allowing every organization that is looking for solutions to address the effects of population ageing to find a recipe that matches its specific needs.

e. DRI: monetization

The interviewed experts could not identify any obvious source of financing for the DRI. The SFSO does not pay third parties for the publication of indicators, and the representatives of Economiesuisse and the SEA both agreed that peak-level BIAs do not have any resources to spend on operational tools such as the DRI, as this is commonly a function attributed to the sectorial BIAs. However, as the Swiss sectorial BIAs still have to deal with a handful of recent political defeats, they have to be considerate of their discontented members and therefore focus on cost-efficiency and services of tangible value added. This raises the question of whether the timing is right for targeting a fee-based and long-term oriented tool such as the DRI at BIAs.

f. Responsibility to take action

The experts agreed that the responsibility to take action was shared between the government and the companies. On the one hand, federal policy-makers should establish a framework in which companies can thrive. On the other hand, companies should maintain the social partnership model in place and show leadership and commitment when addressing the effects of population ageing on their organizations. However, the latter seems to lack the right incentives to adopt a sustained forward-looking strategy.

“Companies in Switzerland benefit from a flexible labor market with qualified employees. This allows them to adopt a reactive rather than proactive stance when it comes to human capital related issues. Therefore, it is in the best interest of both that the Swiss government takes proactive and long-term measures in order to maintain the competitiveness of the Swiss economic environment”, Mario Ramò, Economiesuisse.

Partnering up with BIAs was perceived by the experts to be an efficient way of organizing the DRI. Population ageing is a topic typically handled by employers' BIAs. However, the peak-level BIA for SMEs⁸ and many economic sectors do not have separate BIAs for employers' and trade issues. While the SEA does not have the resources to support the DRI directly, it could nonetheless issue a recommendation letter and provide its patronage to the project.

⁸ The Swiss Union of Small Businesses participated in the questionnaire. They acknowledged that population ageing is the most strategically relevant megatrend to them and that they actively try to help their members take initiatives to address its effects. However, they indicated that the DRI would not be very useful to their organization directly, and that they would not be willing to pay for it or distribute the DRI survey to their members.

“In order to get started with the indicator, a particularly motivated sectorial BIA should be convinced to do a pilot project. If successful, the DRI could then start spreading across the other BIAs”, Martin Kaiser, SEA.

6.3 Quantitative research

This section provides an overview of the quantitative strand of the research design. The first subsection examines the research method, sampling, and data collection. The second subsection explains the data analysis. The third subsection discusses the quantitative results by comparing them to the desk research and expert interview findings, as well as to Bonafini’s quantitative results.

6.3.1 Method, sampling, and data collection

The quantitative strand of the research design aims at testing the hypotheses formulated in the qualitative strand and at generalizing those findings to the whole population in order to answer the research questions formulated in the introduction (cf. section 1.1)(Creswell & Plano Clark, 2011, p.188). For that purpose, an internet-mediated, self-administered questionnaire was developed based on the exploratory results of the desk research (sections 2.2, 3.3, 4.4, and 5.5) and expert interviews (subsection 6.2.3)(Creswell & Plano Clark, 2011, p.60; Saunders et al., 2009, p.362). This research method was chosen due to its appropriateness for the objective of the study as well as its cost and time effectiveness (Bryman & Bell, 2007, p.241).

The questionnaire consists of five sections (cf. appendix E). Section one collects attribute variables in order to assess the responding BIAs’ characteristics (Saunders et al., 2009, p.368). Section two evaluates the relative importance of population ageing amidst the BIAs’ strategic priorities. Section three measures the attitude, level of engagement, time horizon assessment, pressing issues, and self-perceived competency of BIAs when dealing with population ageing. Section four investigates the opinion of the BIAs on the type of organization that ought to take the lead when dealing with the effects of population ageing on the Swiss economy as well as on what they perceive to be their own role in that process. In section five, the DRI rationale is explained and the BIAs are asked to indicate whether they find the introduced tool useful, whether they would be willing to pay for its utilization, whether they would be willing to collaborate for the survey distribution, and what tool they would rather use.

The online professional tool [surveymonkey.com](https://www.surveymonkey.com) was used to create the questionnaire. It was chosen because of its pleasant design, user-friendliness, and sophisticated analytical tools. The wording was chosen in line with the precedent set by Bonafini (2013), whereas every single question was worded in a clear, familiar, and precise way and vetted for double

negations, judgmental components, and biases (pp.60-63). The predominantly opinion and behavioral questions either adopted a list format based on multiple-choice boxes or a rating format based on five-point Likert scales (Saunders et al., 2009, pp.375-378).

In order to avoid any answer being left out by inadvertence, forced choice questions were used, whereas hesitant respondents always had an alternative resort with “I don’t know” or “other” answer options (Saunders et al., 2009, p.374). The questionnaire was tested in order to ensure its fluidity, validity, and reliability and the questions were permuted randomly within every subsection, thereby avoiding question order biases (Saunders et al., 2009, p.373). The length of the 17 question survey did not negatively influence the participation rate, which at 20 percent lies considerably above the prevailing standards (Saunders et al., 2009, p.364). This is most likely due to the salience of the population ageing topic for the respondents (Bryman & Bell, 2007, p.241; Saunders et al., 2009, p.383).

The questionnaire was administered to the entire relevant population of Swiss sectorial BIAs, which according to Martin Kaiser from the SEA (cf. appendix C), consists of the sectorial BIAs that belong to at least one of the three peak-level BIAs Economiesuisse, the Swiss Union of Small Businesses, and the Swiss Employers’ Association. Therefore, to be considered for the present study, a sectorial BIA must prove the minimum level of professionalism that usually accompanies a peak-level BIA membership. Whenever possible, the cover email that included a link to the questionnaire was addressed to the director of the BIA, elsehow to the standard contact address. The purpose of the questionnaire was clearly announced in the cover email as well as in the online survey introduction, thereby ensuring both “that the topic is clearly defined for each respondent and that each answer will be relevant to it” (Foddy, 1993, pp.36-37).

The number of BIAs contacted stands at 246, while 85 responded to the e-mail (35 percent response rate). However, 35 respondents replied that population ageing was not important to their BIA or that they had not yet dealt with the topic because of deficient resources and that they hence would not complete the questionnaire.

The remaining 50 respondents took part in the questionnaire (20 percent participation rate) between March 25 and April 8, 2014. 46 percent of the questionnaire answers were triggered by a follow-up e-mail on March 31, 2014. Of the 50 questionnaires, 35 were deemed suitable for evaluation, as 11 of them had not been completed in their entirety and four had been filled out by organizations not fully matching the selection criteria. All 35 respondents whose answers were evaluated held a position of responsibility at a sectorial BIA that belongs to at least one Swiss peak-level BIA. Together, they represent all major Swiss industries (cf. appendix F).

6.3.2 Data analysis

Descriptive statistics were used to analyze the questionnaire answers (Saunders et al., 2009, p.362). This approach is typically distinguished from inferential statistics, as the former simply summarizes and describes the characteristics of the collected data, while the latter allows for drawing conclusions around the entire population. However, the use of descriptive statistics suffices to verify the formulated hypothesis and draws conclusions generalizable to the entire population, as in the present study the entire relevant population was asked to answer the questionnaire (Trochim, 2006). Therefore, the analysis of the questionnaire data is based on the central tendencies and distributions of the answers and supported by plots and graphs that summarize the average answer ratings or total number of selections for every item on the questionnaire (cf. Appendices F and G).

6.3.3 Discussion of the results

In this subsection, the questionnaire answers (cf. appendix F and G) are compared to the desk research and expert interview findings, as well as to Bonafini's (2013) quantitative results (pp.65-67). This juxtaposition helps clarify, interpret and question the data provided by the BIAs (Creswell & Plano Clark, 2011, p.71; Johnson et al., 2007, p.115). The thematic structure adopted for that purpose mirrors the one of the questionnaire (cf. appendix E).

BIA sensitivity to the topic of population ageing and industry level DRI need

The BIAs indicated that population ageing was the megatrend that had the highest long-term strategic relevance for their organizations, followed by natural resources decline and globalization (cf. appendix G, question 8). This corroborates Bonafini's (2013) findings, which rank population ageing as the most important megatrend for Swiss businesses in the medium to long-term. Thereby, these findings further support the hypothesis that with population ageing, the DRI tackles a topic of major significance for the Swiss private sector (p.65).

The respondents agreed strongly with the statement that population ageing will play an important role for their members in the future (75 percent IoA⁹). They expect population ageing to have an already noticeable economic impact in the short- to medium-term. Their approach to the megatrend is preponderantly positive, as shown by the 73 percent IoA on the statement that population ageing brings along new opportunities for their members. However, the BIAs acknowledged that despite the relevance and topicality of the population

⁹ To most questions, the respondents could provide an answer between 1 (= total disagreement) and 5 (= complete agreement). In order to facilitate the interpretation of the questionnaire results in this subsection, the "intensity of agreement" (IoA) measure was calculated by subtracting one from the average answer ratings (cf. appendix G) and multiplying the intermediary results by 25 percent. Therefore, an intensity of agreement of 0 percent stands for total disagreement whereas one of 100 percent indicates complete agreement.

ageing megatrend, they were only moderately active in supporting their members with the identification of issues and launching of countermeasures aimed at the effects of population ageing (45 percent IoA). In this regard, 43 percent of the respondents revealed that they were completely inactive or only active to a very low extent (cf. appendix G, question 9). This concurs with Bonafini's (2013) and the Adecco Institute's (cf. subsection 2.2.1) findings that show approximately half of the company-level survey respondents do not consider population ageing in their strategic planning (p.51).

In addition, the BIAs indicated that they lacked sufficient information to assess the impact of population ageing on their members, to assess the level of preparedness of their members to face population ageing, as well as to help their members plan initiatives to address the effects of population ageing. All three dimensions are indicated by IoA scores of 48 percent or lower (cf. appendix G, question 10).

It can be inferred from these answers that a comprehensive tool offering guidance and empowering organizations to tackle the population ageing issue in a holistic way is not yet used in the private sector and that there is a lack of quantitative data allowing the assessment and monitoring of the economic effects of population ageing. Those considerations confirm the expert interview results (cf. subsection 6.2.3, b. and c.) and reinforce the hypothesis that a substantial need and therefore also market potential for a company-level DRI with industry-level aggregation exists.

Important industry level DRI themes

When asked about the relevance of population ageing-related dimensions for the profitability and sustainability of their members, the BIAs selected "shrinking labor supply" as the most important issue with a 72 percent IoA. As well, the consumption-related dimensions resulted as being very important, whereas "changing needs and products demand in an ageing society" ranks second with a 69 percent IoA and "changing purchasing and consumption patterns of older customers" ranks third with a 59 percent IoA. The top five is completed by "ageing workforce" and "sustainable financing of old age provisions", ranking fourth and fifth respectively (cf. appendix G, question 11).

Bonafini's (2013) company-level results feature the same top five dimensions, with the exception of "international migration of workforce" replacing "sustainable financing of old age provisions" (p.66). These findings demonstrate that at company and industry levels, the private sector is most preoccupied by other issues than the sustainable financing of public pension systems, which however is the dimension that dominates the public debate (cf. subsection 6.2.3, a.). This further strengthens the hypothesis that by offering information customized to previously unaddressed private sector needs, the DRI can differentiate itself from already existing tools and expect to achieve a high market penetration rate (cf. section 4.3).

Finally, the gender and age diversity issues as well as the potential know-how loss linked to the mass-retirement of baby-boomers were indicated to be the least relevant dimensions by the BIAs (cf. appendix G, question 11). These results equal those gathered by Bonafini (2013) at a company level and indicate a potential underestimation of the relevance of these dimensions in the Swiss private sector (p.51). This hypothesis is supported by the insight that the more difficult a dimension is to quantify and monitor, the more likely it is to be discarded by management (cf. section 3.3).

Projected industry level DRI users

With an IoA of 85 percent, the BIAs designated companies as the primary stakeholders in charge of addressing the effects of population ageing on the private sector. Ranked next are employers' BIAs with a 77 percent IoA, the Swiss parliament with a 74 percent IoA, and sectorial BIAs with a 69 percent IoA (cf. appendix G, question 12). The perceived leadership position of companies stands in contrast to their perceived lack of incentives to act (cf. subsection 6.2.3, f.), and therefore represents an argument in favor of a tool for evidence-based decision-making such as the DRI, as it would sensitize companies to their interest of taking action.

With regard to concrete actions to be taken, the sectorial BIAs agreed the most with the statement that it was their role to increase awareness on the issues raised by population ageing through public relations work (53 percent IoA). Influencing the legislative process at national level to improve the framework conditions (52 percent IoA) and coordinating the actions of members to identify and implement strategic measures (47 percent IoA) are two other important roles that the sectorial BIAs identified as their own (cf. appendix G, question 13). This concurs perfectly with the measures initiated by the SEA thus far (cf. subsection 6.2.3, c.) and appears to mirror the conservative approach BIAs adopt to support their members. Therefore, it is not surprising that "supplying instruments to improve the implementation and monitoring of strategic measures" came in last, with a 40 percent IoA, indicating that a change of paradigm is needed before the DRI concept can find a broad support base among the Swiss sectorial BIAs (cf. appendix G, question 13).

Perceived interest and usefulness of the DRI at industry levels

The usefulness of the DRI in supporting the BIA's efforts to address the economic effects of population ageing reached an IoA of 42 percent (cf. appendix G, question 14). This is 12 percentage points lower than the usefulness assessment at a company level (Bonafini, 2013, p.67). While 51 percent of the BIAs indicated that they would collaborate with the DRI, only 11 percent offered to pay for it (cf. appendix G, questions 15 and 16). This stands in contrast to the 39 and 46 percent respectively at a company level (Bonafini, 2013, p.67), and indicates that the most efficient way of financing the DRI might be to charge its company-level users directly, as they seem to have the higher spending propensity (cf. section 4.4). The sectorial BIAs indicated that instruments of predilection that inform organizations on the

topic of population ageing are the statistics published by the Swiss government, BIA publications, and member surveys, as well as general media, whereas the DRI barely made it in the top 10 of all options (cf. appendix G, question 17). Their answers corroborate with the ones given at a company level where the BIA publications and the general media also appeared among the top four sources (Bonafini, 2013, p.66). As the interviewed experts also mentioned the BIA publications several times (cf. subsection 6.2.3, b.), it appears that linking the DRI to this media could highly increase its rate of diffusion and accelerate its rate of adoption among its key stakeholders.

Population ageing sensitivity differences among BIAs

When evaluating the questionnaire data, it is important to emphasize that the whole relevant population was invited to participate in the survey, but that 65 percent of the contacted BIAs did not react to the two invitation emails and that 41 percent of those who reacted chose not to participate in the questionnaire. The share of large BIAs that participated in the questionnaire was disproportionate to the one of small BIAs, thereby indicating that the latter might not have enough resources to sustain activities diverging too strongly from their core operations. This assumption is corroborated by the fact that most of the 35 BIAs that answered to the email but did not participate in the survey were small BIAs which clearly communicated that they lacked the capacity to deal with the topic of population ageing.

This fact promotes the hypothesis that due to increased available resources and pre-existing activities in this field, large BIAs might benefit more from the DRI than average ones. In fact, when analyzing the isolated answers of the five largest and most powerful sectorial BIAs, representing the electrical and mechanical engineering, banking, insurance, pharmaceutical, and chemical sectors (cf. section 5.2), the DRI prospects look much sounder indeed. Their assessment of the relevance of population ageing is 18 percentage points higher than the BIA average (cf. appendix G, question 8), their agreement on the fact that population ageing will play an important role for their members in the future is 20 percentage points higher than the BIA average, and accordingly, their agreement with the statement that they are actively helping their members to address the effects of population ageing is a stunning 25 percentage points higher than the BIA average (cf. appendix G, question 9). Most importantly, they perceive their role to be to offer instruments to implement and control strategic measures with a 15 percent higher intensity of agreement than the BIA average (cf. appendix G, question 13). Congruently, their expected DRI usefulness stands at 18 percent above the BIA average (cf. appendix G, question 14). It therefore appears that at least in the short-term, the potential synergies between the BIAs and the DRI highlighted in section 5.5 are most likely to materialize with large BIAs.

7. Conclusions

The insights gained throughout this master's thesis allow for a multitude of considerations regarding the potential of a company-level DRI with industry-level aggregation. The first section of this concluding chapter looks at the implications of the findings for the development of the DRI. The second section acknowledges the limitations of the study. The third section provides recommendations on the next steps to be taken.

7.1 Implications for the development of the DRI

Bonafini (2013) specifically targeted companies from industries with an advanced state of workforce ageing and a sufficient share of B2C activities to answer his company-level DRI questionnaire (p.50). In contrast, the present thesis approached the Swiss private sector in an inclusive way. This approach was based on the understanding that population ageing affects every economic sector on a multitude of dimensions (cf. subsection 2.1.5) and that any arbitrary sampling criteria would therefore be inadequate to test the rationale of a tool with the stated aim of providing guidance and empowering organizations to tackle the population ageing issue in a holistic manner.

Fittingly, the industry-level questionnaire answers were found to differ not based on the BIAs' industry, but rather on their organizations' size (cf. subsection 6.3.3). While it appears that a paradigm shift is needed for the smaller BIAs to adopt a tool like the DRI, the larger BIAs were quite enthusiastic about the perspective of working with the DRI. A gradual introduction of the DRI to the Swiss private sector based on partnerships with highly motivated large BIAs hence appears more feasible than a tentative comprehensive DRI launch across all industries. Once best-practices have been established and first successes achieved, smaller BIAs can be expected to manifest their interest for the DRI as well, thereby contributing to an economy-wide diffusion of the tool.

As suggested in the introduction (cf. section 1.1), the DRI would fill the void of comprehensive tools that would help company- and industry-level stakeholders to address the effects of population ageing on their organizations in a holistic way. The DRI stakeholders acknowledge the strategic relevance of population ageing for their organizations and admit to be in dire need of adequate information for evidence-based decision-making (cf. subsection 6.3.3). While the present thesis agrees with Bonafini (2013) that the way to go is to design an indicator aimed at assessing company and industry risk (p.53), it disagrees on the two points that the indicator should focus on labor supply and ageing workforce and that it should include forecasts. Instead, the present thesis argues that the DRI should use its comprehensive approach as a differentiating factor (cf. section 4.3) and establish itself as the standard monitoring tool for the private sector's state of preparedness to address the effects of population ageing.

The proposed DRI would be unique in its kind and would not have to compete with another metric of the MONET system of national indicators which measures the sustainable development in Switzerland (cf. subsection 6.2.3., b and d.). In addition, if the DRI appeared in the BIA publications and were occasionally taken up by the media, it would achieve a highly effective diffusion over two of the information sources on population ageing most utilized by private sector stakeholders (cf. subsection 6.3.3). Such a widely available DRI could offer unique synergies to the collaborating BIAs by helping them fulfill their already existing tasks even more effectively. First, the DRI would represent a legitimate source of information on the demographic risks threatening the private sector and could be effectively used to inform and influence the national legislators in charge of setting the framework conditions. Second, the DRI would assist the BIAs in increasing public awareness on the topic by providing media with evidence-based narratives. Third, the DRI would support BIA members that seek to improve their status by allowing them to use the industry-level aggregates for benchmarking purposes (cf. subsection 6.3.3).

7.2 Limitations of the study

The main limitations of this study are the validity, reliability, and generalizability of its empirical findings. They need to be considered on three dimensions in particular. First, the empirical part of this paper aims at assessing the subjective perspectives of experts and sectorial BIA representatives. While the interview focus was put on their technical knowledge, the information gained remains subject to the idiosyncrasies of the individuals and varies therefore in accordance with the expert selection. Second, the present thesis is based on Bonafini's (2013) work and is therefore strongly influenced by the choices he made. Without his preliminary work, the present thesis would have had less initial limitations on DRI development options. Third, as the production of an actual DRI prototype lies beyond the scope of this thesis, the interviewed industry-level stakeholders were confronted with the more difficult task of assessing the DRI concept. With an actual prototype, the feedback quality could have been increased.

7.3 Recommendations on the next steps to be taken

Despite its relatively narrow scope, this master's thesis collaboration with Bonafini has allowed the delimitation of the purpose and format of a company-level DRI with industry-level aggregation, as well as a way to assess its stakeholders' interests and motivations. Based on these insights, a road map with recommendations for its development can be formulated.

First step: Assemble a group of demography and statistics experts

Experts are needed to assess whether the creation of a three-layered composite indicator such as the one outlined in this thesis is technically feasible. Thereby, four main constraints

need to be taken into account. First, the DRI needs to be based on data companies can realistically be expected to source from their controlling systems. Second, the identified KPIs must be both relevant at a company level as well as at industry levels once aggregated. Third, the dimensions must be comprehensive yet customizable enough to address the heterogeneous company and industry needs. Fourth, the DRI must be designed to remain representative of a specific industry and of the economy as a whole even if a certain number of companies and industries do not provide their numbers. Once its feasibility is established, the basic dimensions and structure of the DRI must be determined and modeled into a prototype. According to Vincent Willi from the SFSO (cf. appendix C), it is crucial to lay the groundwork before negotiating the implementation of the tool with potential partners as it ensures its objectivity and independence, and therefore the credibility of the DRI.

Second step: Partner up with motivated BIAs

The DRI prototype should be used to convince at least one motivated BIA to enter a partnership and to provide the financing for the DRI development. Based on the questionnaire of the empirical part of this study, four large sectorial BIAs have been identified as potential partners. They provided particularly high ratings on the questions related to the usefulness of the DRI, their likelihood of using the DRI, their willingness to collaborate with the DRI, and their willingness to pay for the DRI (cf. appendices F and G). In addition, Reto Givel from the administration of the canton of Zurich suggested a DRI label should be created to incentivize companies to adopt the new tool. As companies cannot expect a rapid positive financial impact linked to the DRI adoption, they could at least benefit from the goodwill of their stakeholders by publically signaling their commitment for the cause of the ageing population (cf. appendix C).

Also, according to the questionnaires, the companies' readiness to pay for the DRI is considerably larger than the one of BIAs (cf. subsection 6.3.3) and should therefore be considered when negotiating the financial terms of the partnership agreements with BIAs. Alternatively, the DRI could seek funding from a foundation active in the promotion of the situation of older people that is looking for a signature composite indicator to make itself known (cf. subsection 4.2.1).

Third step: Involve all relevant DRI stakeholders in the development process

Once the BIA partner and project financing are secured, all the DRI stakeholders at company and industry levels must be involved in the development process of the DRI in order to maximize its chances of adoption (cf. section 4.4). Finally, while the proposed name of the DRI contains the word risk to emphasize the urgency to address population ageing, it could be replaced by a name that stresses the positive aspects of demographic change. Indeed, one should not forget that "the challenge ... is to champion social change that capitalizes on the worth of an increasing older population" (Uhlenberg, 2013, p.18), and not simply to neutralize its potentially damaging effects.

Appendix A: Characteristics of existing indicators compared to the DRI

Indicator	Publisher and financing	Purpose and update frequency	Envisaged users and availability for Switzerland
<p>Ecological Footprint</p> <p>(Hák & Janoušková, 2012, pp.30,72-84) (Global Footprint Network, 2014)</p>	<p>The Global Footprint Network, a charitable nonprofit organization</p> <p>The indicator is financed by donations from individuals, foundations, corporations, and public agencies.</p>	<p>The composite indicator is an accounting framework that tracks the human demands on the biosphere compared to the regeneration capacity of the available biologically productive areas.</p> <p>The indicator is updated annually.</p>	<p>General public, policy-makers, corporations, experts and scientists</p> <p>The indicator is available for Switzerland.</p>
<p>Global Competitiveness Index</p> <p>(Tošović Stevanović, 2011, pp.409-411) (Schwab, 2013)</p>	<p>The World Economic Forum (WEF), a Swiss nonprofit foundation</p> <p>The indicator is financed by the membership fees of corporations.</p>	<p>The composite indicator assembles the macroeconomic and the micro/business aspects of national competitiveness into a single index allowing the ranking of countries.</p> <p>The indicator is updated annually.</p>	<p>General public and media (as a PR tool), corporations, experts and scientists</p> <p>The indicator is available for Switzerland.</p>
<p>Human Development Index</p> <p>(Hák & Janoušková, 2012, p.30) (United Nations, 2014b)</p>	<p>The United Nations Development Programme</p> <p>The indicator is financed by the United Nations and their member states as well as through donor funds.</p>	<p>The composite indicator is a single statistic serving as a frame of reference for social and economic development by combining indicators of life expectancy, educational attainment, and income.</p> <p>The indicator is updated annually.</p>	<p>General public, policy-makers, experts and scientists</p> <p>The indicator is available for Switzerland.</p>
<p>SFSO Population Indicators</p> <p>(Swiss Federal Statistical Office, 2014a)</p>	<p>The Swiss Federal Statistical Office (SFSO)</p> <p>The indicators are financed by the Swiss Confederation.</p>	<p>Raw statistics describing the structure and dynamics of the Swiss population.</p> <p>The indicators are updated annually.</p>	<p>General public, policy-makers, corporations, experts and scientists</p> <p>The indicators are available for Switzerland.</p>

<p>Demographic Fitness Index</p> <p>(Adecco Institute, 2008)</p>	<p>The Adecco Institute, a global research center studying work and its impact on society</p> <p>The indicator was financed by Adecco Group, the world's largest provider of HR solutions.</p>	<p>The indicator is thought as a tool to help corporations assess their degree of preparedness to face population ageing in the fields of career management, lifelong learning, knowledge, health, and diversity management.</p> <p>The indicator used to be updated annually, but was discontinued without explanation after three editions in 2008.</p>	<p>Corporations</p> <p>The indicator was available for Switzerland.</p>
<p>Work Ability Index</p> <p>(Morschhäuser & Sochert, 2006, pp.34-39) (Universität Wuppertal, 2014)</p>	<p>The European Network for Workplace Health Promotion</p> <p>The promotion of the indicator is financed by the European Commission.</p>	<p>Based on employees' self-assessment, the indicator aims at identifying early stage employee health risks as well as risks of early retirement in order to counteract them.</p> <p>How often the indicator is update depends on the corporation.</p>	<p>Corporations and their employees</p> <p>The Indicator is available for Switzerland.</p>
<p>Demographic Risk Map</p> <p>(Econsense, 2008)</p>	<p>Econsense, Forum for Sustainable Development of German Business and the Rostock Center for the Study of Demographic Change</p> <p>The DRM is financed by a group of leading German corporations.</p>	<p>The DRM helps corporations integrate demographic change into their strategic planning. It aggregates publicly available data to inform about regional demographic change and regional demographic location risks.</p> <p>The DRM has not been updated since its inception in 2008.</p>	<p>Corporations</p> <p>The DRM is not available for Switzerland.</p>
<p>Global Age Watch Index</p> <p>(HelpAge, 2013)</p>	<p>HelpAge International, a nonprofit organization, and the United Nations Population Fund</p> <p>The indicator is financed by donors and international</p>	<p>The indicator allows for international comparisons of quality of life in older age by aggregating data from global institutions and analyzing income, health, education, employment, and age-</p>	<p>General public, policy-makers</p> <p>The indicator is available for Switzerland.</p>

	institutions, of which the United Nations Population Fund contributes the most.	friendly environment in each country. The indicator is updated annually.	
Active Ageing Index (United Nations, 2014a)	The European Commission's Directorate General for Employment, Social Affairs and Inclusion (DG EMPL) and the Population Unit of the United Nations Economic Commission for Europe (UNECE) The indicator is financed by the European Union and the United Nations and their member states.	The indicator measures the untapped potential of older people for active and healthy ageing across countries. It ranks those countries according to the level to which older people live independent lives, participate in paid employment and social activities as well as their capacity to actively age. The indicator is updated annually.	General public, policy-makers The indicator is not available for Switzerland.
Demographic Risk Indicator	An independent organization backed by Swiss BIAs and the WDA Forum The indicator will be financed by BIAs and their member companies.	The indicator is a management tool to monitor and improve the level of preparedness of companies, industries, and the country as a whole to face the effects of population ageing on the Swiss economy. The indicator will be updated annually.	General public, policy-makers, corporations The indicator will be available for Switzerland only.

Table 1: Characteristics of existing indicators compared to the DRI

Appendix B: Swiss BIA media review

The media review was conducted based on ten newspaper articles, written by ten different journalists, and published by two Swiss reference media between July 2010 and February 2014 (cf. Table 2). The five articles in German from the *Neue Zürcher Zeitung* and the five complementing articles in French from *Le Temps* were randomly selected among a sample of articles from the online archives of the respective newspapers. The samples grouped a broad selection of background articles about Swiss BIAs at sectorial and peak level.

Newspaper	Publication date	Title of article	Name of journalist
Neue Zürcher Zeitung	09.10.2013	Wirtschaftsstandpunkte im Vertrauensstief	Michael Düringer
Neue Zürcher Zeitung	29.08.2013	Mit Nutzen verbunden	Beat Gygi, Martin Maniera
Neue Zürcher Zeitung	02.05.2013	Verbandskonflikte: Trauerspiel der Krankenkassen	Hansueli Schöchli
Neue Zürcher Zeitung	16.03.2013	Wirtschaftsverbände koordinieren die nächsten Abstimmungskämpfe	Simon Gemperli
Neue Zürcher Zeitung	16.03.2013	Unter Wasser	René Zeller
Le Temps	07.02.2014	Les patrons n'osent plus défendre la place économique suisse	Willy Boder
Le Temps	05.03.2013	Economiesuisse, un lobby coupé du quotidien	Yves Petignat
Le Temps	22.08.2011	Le PLR n'est-il que la marionnette des milieux économiques?	Olivier Meuwly
Le Temps	30.07.2010	L'USAM s'invite dans la discussion sur l'Europe	Daniel Miéville
Le Temps	08.04.2011	« Le lobbying est légitime, mais on doit lui fixer un cadre »	Bernard Wüthrich

Table 2: Swiss BIA media review overview

Appendix C: Interviewed experts

Interviewee	Organization	Organization Description
Nadine Masshardt Parliamentarian	Swiss National Council	The Swiss National Council is one of the two chambers of the Federal Assembly, which is the supreme authority of the Swiss Confederation.
Vincent Willi Project Manager	Swiss Federal Statistical Office (SFSO)	The SFSO belongs to the Federal Department of Home Affairs and provides public statistics to help shape the public opinion, facilitate policy making, and assess government action.
Dr. Reto Givel Director	Department in charge of secondary schools and vocational training for the canton of Zurich	The department is in charge of organizing and supervising all the secondary schools of the canton of Zurich, as well as coordinating the local apprenticeships.
Mario Ramò Project Manager for the Board Dr. Stefan Vannoni Vice-President of the Department for Economic Policy Frédéric Pittet Project Manager Taxes and Finances	Economiesuisse	Economiesuisse is the Swiss peak-level trade association for large- and medium-sized companies, representing 100 sectorial trade associations, 100'000 companies and 2 million employees.
Martin Kaiser Director	Swiss Employers' Association (SEA), Department for social policies and social security	The SEA is the Swiss peak-level employers' association representing 39 sectorial employers' associations, 100'000 companies and 1.5 million employees.

Table 3: Overview of the interviewed experts and their organizations of reference

Reasons behind the expert selection

Nadine Masshardt is a Swiss federal legislator and a member of the Social Democratic Party of Switzerland. As such, she is often opposed to the center-right political parties which are the traditional allies of the Swiss BIAs. She therefore contributes an interesting outsider perspective to the potential DRI collaboration with BIAs. In addition, she is also a member of the Federal Assembly Political Institutions Committees (PIC) in charge of migration and federal statistics, two topics closely linked to the population ageing issues (Masshardt, 2014).

Vincent Willi is in charge of the MONET system of national indicators at the SFSO. The purpose of the MONET system is to monitor the sustainable development in Switzerland. It is based on 76 indicators updated on a yearly basis and attributed to the subcategories of 'social solidarity', 'economic efficiency', and 'environmental responsibility'. While the

economic indicators of the MONET system measure national productivity and gender equality, which are two dimensions linked to the population ageing issues, the system does not directly monitor population ageing or any other demographic developments (Swiss Federal Statistical Office, 2014d).

Dr. Reto Givel is head of the department in charge of secondary schools and vocational training for the canton of Zurich. According to the federal division of tasks, it is the cantons which are in charge of handling education and Reto Givel is fully responsible for the largest young student population in all Swiss cantons. Reto Givel is therefore one of 26 people to shape the Swiss educational system at the secondary school level and by doing so determines the size, skill level, and orientation of the future pool of Swiss employees available to local companies. He regularly supports his decisions on key indicators (Bildungsdirektion Zürich, 2014).

Mario Ramò, Dr. Stefan Vannoni, and Frédéric Pittet work for Economiesuisse, the largest Swiss peak-level trade association which has the mission to improve the framework conditions for the private sector and to promote sustained economic growth in Switzerland. The BIA is active in the fields of economic policies, public finances, international economic relations, education and research, and regulatory affairs. In order to promote evidence-based policies, Economiesuisse relies on high-quality statistical data (Economiesuisse, 2014).

Martin Kaiser is in charge of the department of social policies and social security at the largest Swiss peak-level employers' association. Its mission is to improve the Swiss economic competitiveness by focusing on the levers of labor market and labor law, social policies and social security, education and training, occupational safety and health protection, as well as international affairs (Schweizerischer Arbeitgeberverband, 2014). Martin Kaiser was added to the expert sample based on Mario Ramò's recommendation. The reason for that gradual sampling pattern is that Economiesuisse and the SEA split the peak-level BIA topics between themselves, whereas population ageing falls into the realms of the SEA (Flick, 2006, p.165).

Appendix D: Interview guide for expert interviews

Theme	Specific Questions	Objective
a. Awareness and relevance	<ol style="list-style-type: none"> 1. Are you and the organization you represent aware of the population ageing phenomenon occurring in Switzerland? 2. How relevant for the Swiss competitiveness is this megatrend? 3. When do you expect the effects of population ageing to be realized in the Swiss private sector? 4. Do you perceive any issues raised by the population ageing phenomenon to be particularly pressing? 	Establish expert's general knowledge about population ageing.
b. Risk and impact assessment	<ol style="list-style-type: none"> 1. Do you know about any population ageing risk or impact assessment that has been performed for Switzerland? <ul style="list-style-type: none"> - If yes, do you know whether segmented information is available for the Swiss industries? 2. What population ageing-related issues do you expect to affect Switzerland the most? 3. What population ageing-related issues do you expect to affect the Swiss private sector the most? 4. Have you ever considered the effects of population ageing on the economy-wide service and product demand? 	Inquire about already existing and personal assessments. Ask for specific examples.
c. Current practices	<ol style="list-style-type: none"> 1. Do you know about concrete measures that have been taken to increase the preparedness of Swiss companies to deal with the consequences of population ageing? 2. Do you perceive the stakeholders in charge of determining the Swiss regulatory and economic framework to be aware of the relevant dimensions on which the effects of population ageing must be addressed? 3. How do those stakeholders include population ageing in their strategic planning activities? 4. Does your organization monitor the development and effects of population ageing? <ul style="list-style-type: none"> - If yes, based on what information? 	Identify existing practices and the already available know-how on the issue. Ask for specific examples.
Two-minute introduction of the DRI concept		
d. DRI: interest and potential	<ol style="list-style-type: none"> 1. Do you perceive the DRI to be strategically useful? <ul style="list-style-type: none"> - What practical use can it be to your organization or to other stakeholders? - How frequently should it be published? - Does the lack of international benchmarks impact its usefulness? 2. Do you value all eight DRI dimensions equally? <ul style="list-style-type: none"> - Which ones do you perceive to be the most 	Collect concrete feedback on the DRI design and assumptions behind it.

	<p>important?</p> <ul style="list-style-type: none"> - Is there a dimension you would like to add? <p>3. How can the credibility, legitimacy, and adoption rate of the DRI be optimized?</p> <ul style="list-style-type: none"> - What should be considered in the development process of the DRI? - What should be considered when setting up the organization behind the DRI? <p>4. Do you perceive the composite indicator structure to be the right one for such a tool?</p> <p>5. Do you expect the DRI to be appealing for the media?</p> <p>6. Do you know about any other tools similar to the DRI?</p> <p>7. Do you think that based on a cost-benefit trade-off, another tool could achieve a more efficient impact than the DRI?</p>	
e. DRI: monetization	<p>1. What stakeholder would you expect to be willing to pay for the DRI?</p> <p>2. What stakeholder has most to gain from the DRI?</p>	Ask for concrete reasoning.
f. Responsibility to take action	<p>1. What organization do you perceive to be most directly responsible for inducing change when it comes to increasing the preparedness of the Swiss economy to face population ageing?</p> <p>2. Does it appear sensible to you to publish the DRI in collaboration with BIAs?</p> <ul style="list-style-type: none"> - Do the BIAs have a particular interest to collaborate? - What kind of BIAs would be most willing to collaborate? - Are the Swiss BIAs registered in a central repertory? 	Ask for concrete reasoning.

Appendix E: Internet-mediated, self-administered questionnaire

Einleitung

Herzlichen Dank für Ihre Teilnahme an dieser Umfrage.

Die Umfrage ist Teil einer Masterarbeit der Universität St. Gallen zum Thema Bevölkerungsalterung.

Im Rahmen dieser Umfrage wird das Konzept des "Demographic Risk Indicators" getestet. Der Demographic Risk Indicator ist ein neues strategisches Instrument, welches die Schweizer Unternehmen und ihre Wirtschaftsverbände bei der Bewältigung der wirtschaftlichen Auswirkungen der Bevölkerungsalterung unterstützen soll.

Die Umfrage dauert ca. 15 Minuten. Ihre Antworten werden vertraulich behandelt und werden nicht veröffentlicht.

Sollten Sie beim Beantworten einzelner Fragen nicht über präzise Angaben verfügen, ist es für die Auswertung der Umfrage hilfreicher, wenn Sie eine fundierte Schätzung angeben, statt das Feld leerzulassen oder von der "keine Ahnung"-Spalte Gebrauch zu machen.

Bitte kontaktieren Sie Vincent Barras unter vincent.barras@student.unisg.ch, falls Sie irgendwelche Fragen zur Umfrage haben.

Sie können wie folgt durch die Umfrage navigieren:

- Klicken Sie auf "Weiter" um zur nächsten Seite zu gelangen.
- Klicken Sie auf "Zurück" um auf die vorherige Seite zu gelangen.
- Klicken Sie auf "Fertig" um die ausgefüllte Umfrage abzuschicken.

1. Informationen zu Ihrem Wirtschaftsverband

*1. Wie heisst Ihr Wirtschaftsverband?

2. Welche Beschreibungen treffen auf Ihren Wirtschaftsverband zu?

- Dachverband
- Branchen- oder Fachverband
- Arbeitgeberverband
- Andere (bitte angeben)

3. Welchen Dachverbänden gehört Ihr Wirtschaftsverband an?

- Economiesuisse
- Schweizerischer Arbeitgeberverband
- Schweizerischer Gewerbeverband
- Andere (bitte angeben)

4. Welche Branche(n) vertritt Ihr Wirtschaftsverband?

- Architektur- und Ingenieurbüros
- Autogewerbe
- Banken
- Baugewerbe
- Chemie
- Detailhandel
- Druck und Verlag
- Elektronik
- Elektrotechnik
- Energieversorgung
- Gastgewerbe
- Gesundheitswesen und Pflege
- Grosshandel
- Holzindustrie
- Immobilienwesen
- Informatikdienste
- Kunststoffindustrie
- Landwirtschaft
- Lebensmittelindustrie
- Maschinenbau
- Medizinaltechnik
- Mess- und Kontrollinstrumente
- Metallindustrie
- Möbelindustrie
- Pharma
- Rechts-, Steuer- und Unternehmensberatung
- Sozialwesen und Heime
- Telekommunikation
- Textil- und Bekleidungsindustrie
- Transport und Logistik
- Uhrenindustrie
- Unterrichtswesen
- Versicherungen
- Andere (bitte angeben)

4. Benötigte Bewältigungsmassnahmen

***12. Inwiefern ist es die Aufgabe der unten aufgeführten Akteure, die Schweizer Unternehmen bei der Bewältigung der wirtschaftlichen Auswirkungen der Bevölkerungsalterung zu unterstützen?**

(1 = überhaupt nicht; 5 = voll und ganz)

	1	2	3	4	5	k. A.
Schweizer Parlament	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Branchenverbände	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arbeitnehmerverbände	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unternehmen (Selbsthilfe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schweizerische Bundesverwaltung	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dachverbände	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arbeitgeberverbände	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Andere (bitte angeben)

***13. Auf welcher Ebene sieht Ihr Wirtschaftsverband Handlungsbedarf, um Ihre Mitglieder bei der Bewältigung der wirtschaftlichen Auswirkungen der Bevölkerungsalterung zu unterstützen?**

(1 = kein Handlungsbedarf; 5 = grosser Handlungsbedarf)

	1	2	3	4	5	k. A.
Koordination Ihrer Mitglieder zur Identifikation und Implementierung strategischer Massnahmen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zusammenarbeit mit der Schweizerischen Bundesverwaltung zur Schaffung besserer Rahmenbedingungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beeinflussung des legislativen Prozesses auf nationaler Ebene zur Schaffung besserer Rahmenbedingungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bereitstellung von Instrumenten mit denen die strategischen Massnahmen Ihrer Mitglieder erfolgreicher implementiert und kontrolliert werden können.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Öffentliche Aufklärungsarbeit: PR-Massnahmen zur Mediatisierung der Thematik.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Andere (bitte angeben)

5. Demographic Risk Indicator

Das Konzept in Kürze:

In einer anonymisierten Online-Umfrage reichen Unternehmen alljährlich betriebsinterne Statistiken ein. Die Statistiken messen Unternehmensdimensionen, welche für die Bewältigung der Auswirkungen der Bevölkerungsalterung auf die Schweizer Wirtschaft eine Schlüsselrolle spielen, wie zum Beispiel die Integrierung von Frauen und älteren Arbeitskräften in die Arbeitnehmerschaft, die Erschliessung des Silbermarktes, den Fachkräftemangel, etc. Aus diesen Informationen berechnet eine unabhängige Organisation den Demographic Risk Indicator für jedes Unternehmen. Zudem werden die Indikatoren auf Branchen- und später nationaler Ebene aggregiert.

Mit dem Demographic Risk Indicator erhalten die Unternehmen ein Monitoring-Instrument, mit dem Sie ihre demographische Nachhaltigkeit verfolgen und den Erfolg ihrer strategischen Massnahmen messen können. Zudem können die Unternehmen mit dem aggregierten Branchenwert Benchmarking betreiben.

Auf Branchenebene verfügen die Wirtschaftsverbände dank dem Demographic Risk Indicator über genauere Informationen zu den existierenden Problemfeldern, um konkrete rahmenbedingungenverändernde Massnahmen zu unterstützen.

Auf nationaler Ebene sendet der Demographic Risk Indicator ein jährliches medienfreundliches Signal mit Informationen zum Stand der Vorbereitungen der Schweizer Wirtschaft auf den Umgang mit den wirtschaftlichen Auswirkungen der Bevölkerungsalterung.

***14. Wie nützlich wäre der Demographic Risk Indicator für Ihre Bemühungen zur Bewältigung der wirtschaftlichen Auswirkungen der Bevölkerungsalterung? (1 = nutzlos; 5 = sehr nützlich)**

1 2 3 4 5

***15. Wäre Ihr Wirtschaftsverband grundsätzlich dazu bereit, für den Demographic Risk Indicator Geld auszugeben?**

- Ja
 Nein

***16. Wäre Ihr Wirtschaftsverband grundsätzlich dazu bereit, Ihren Mitgliedern alljährlich eine Online-Umfrage zur Erstellung des Demographic Risk Indicators per E-Mail weiterzuleiten?**

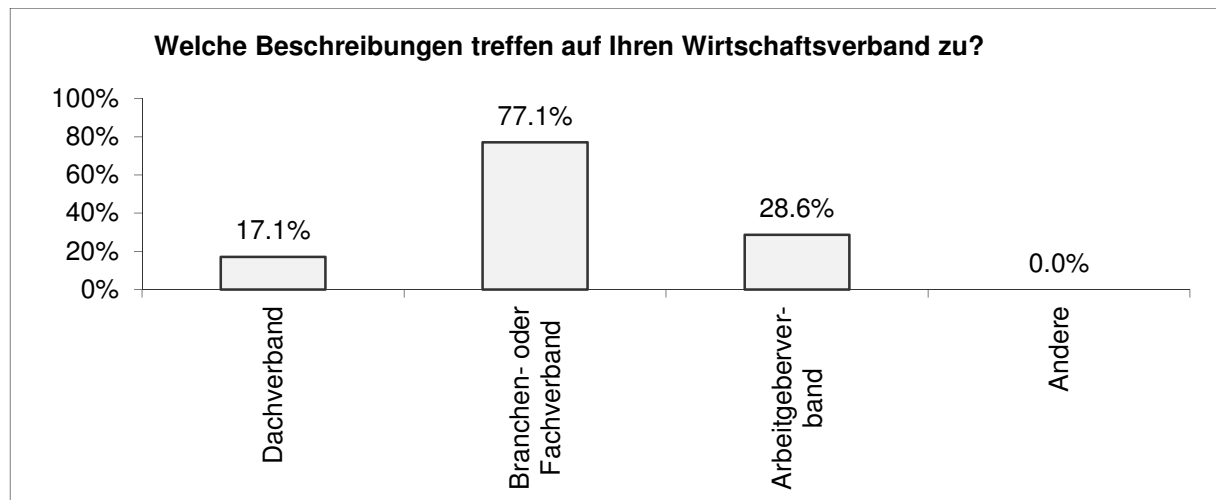
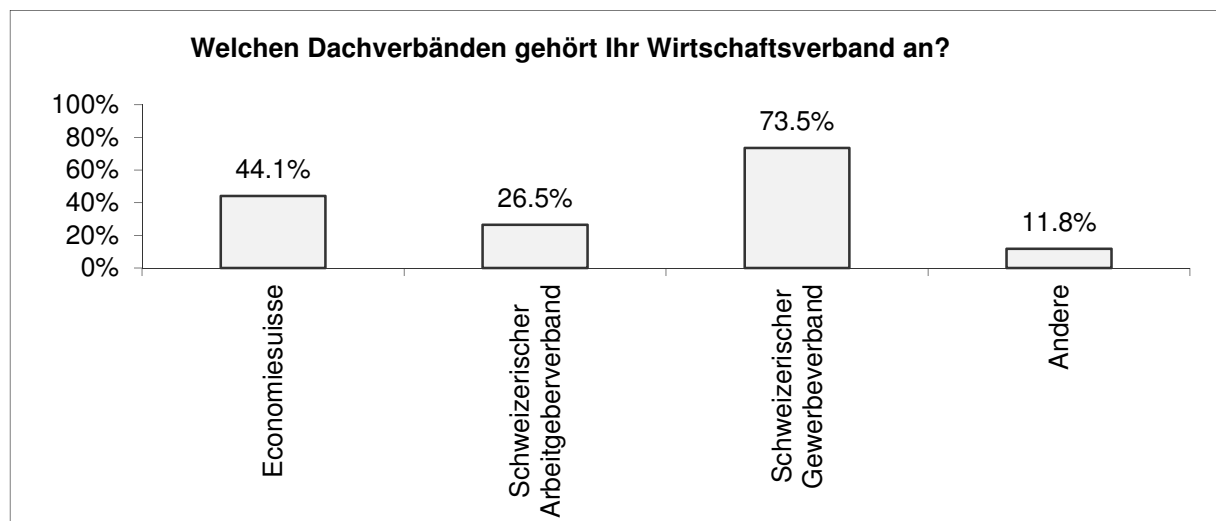
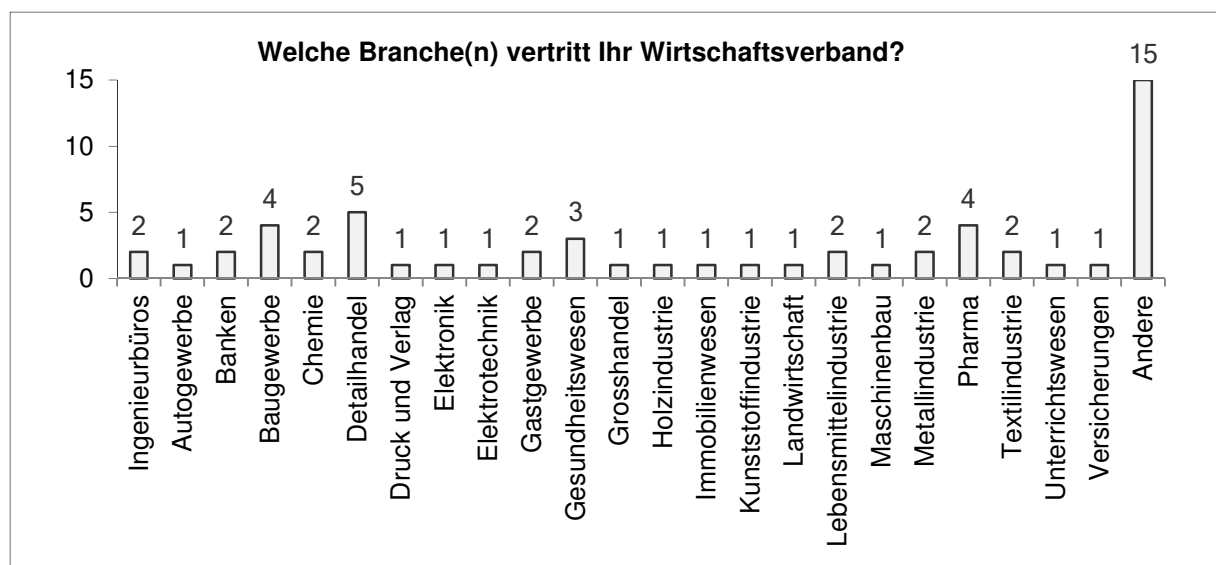
- Ja
 Nein

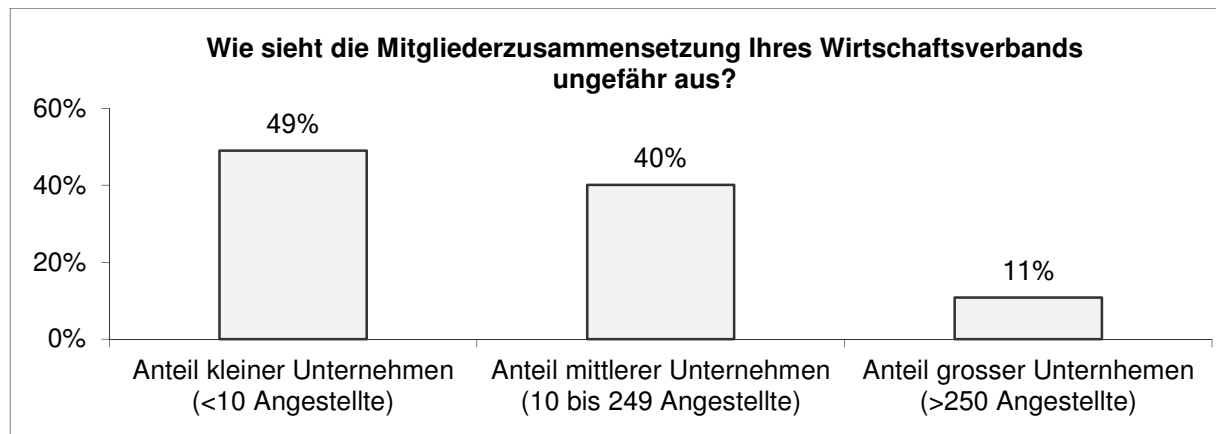
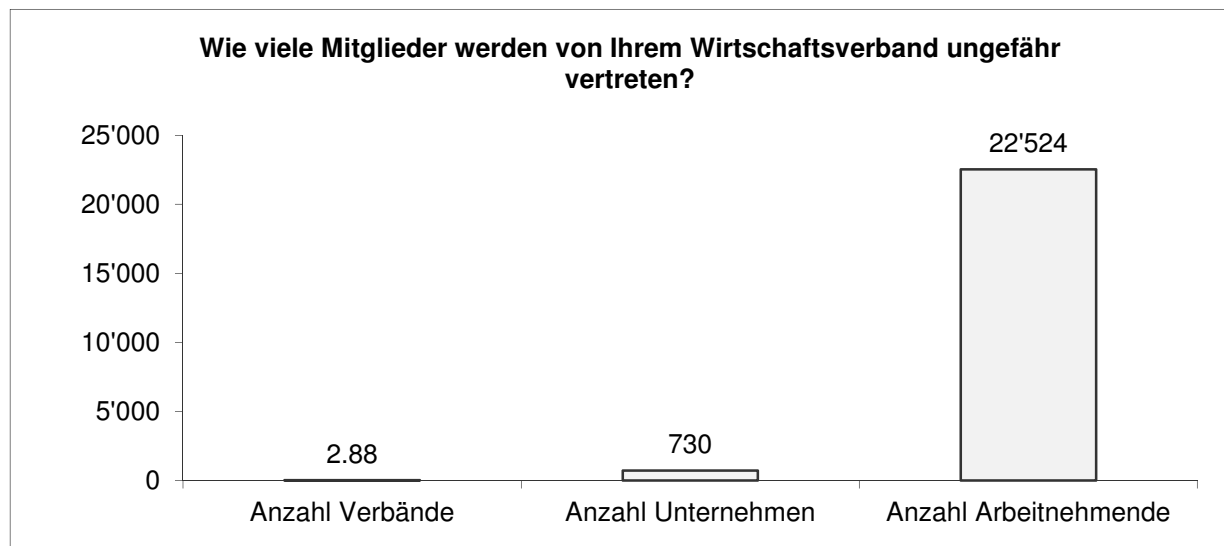
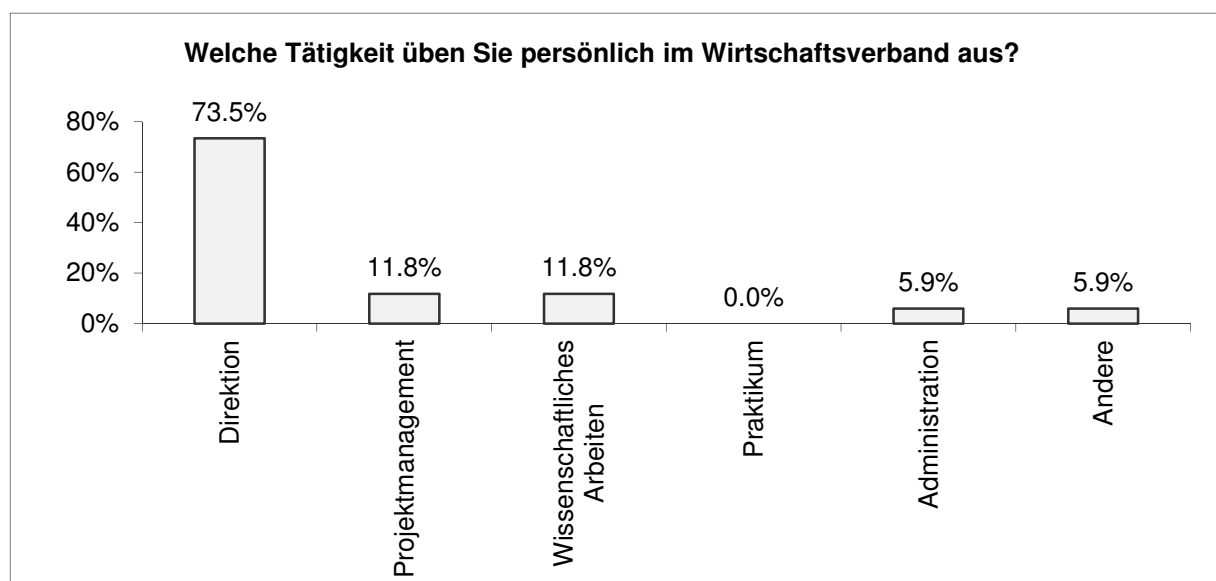
***17. Welche drei Möglichkeiten würde Ihr Wirtschaftsverband vorziehen, um sich über das Thema Bevölkerungsalterung zu informieren und konkrete Bewältigungsmassnahmen zu planen?**

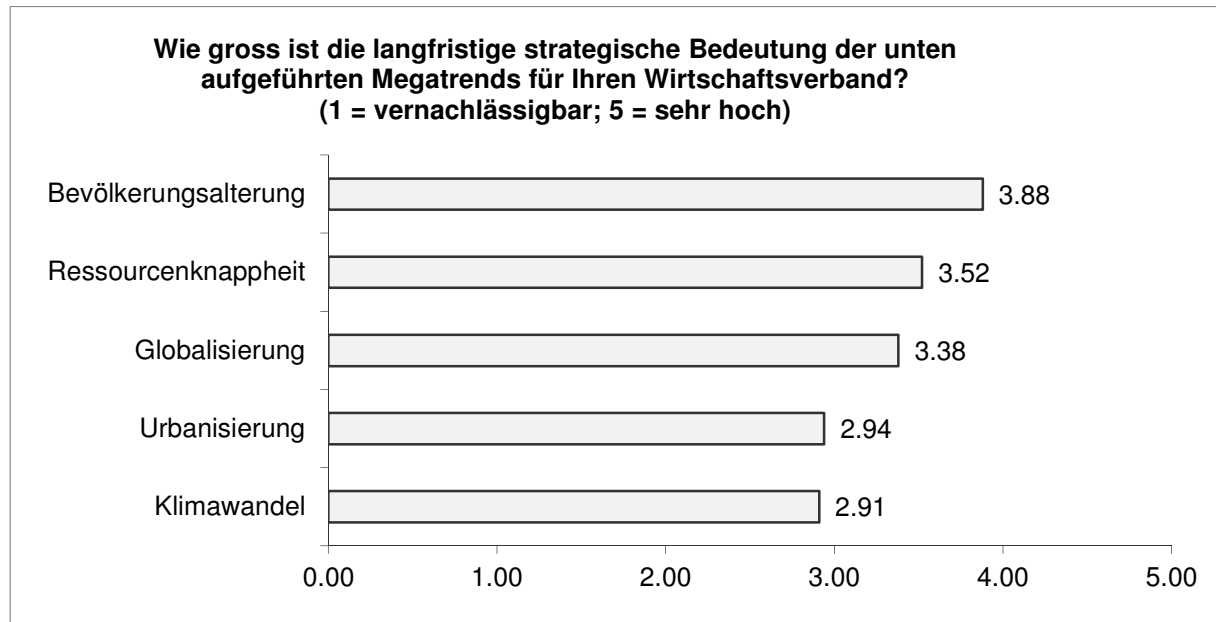
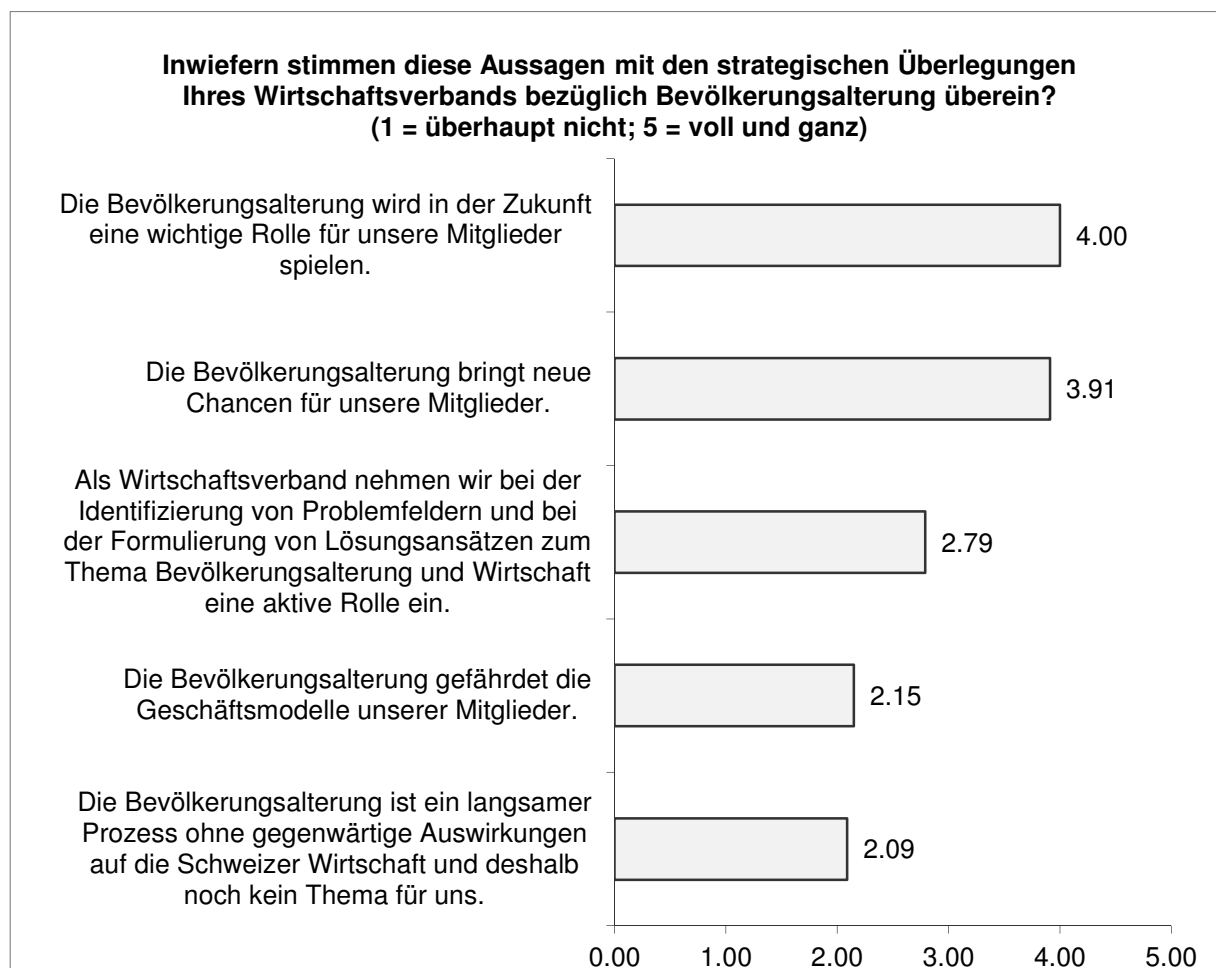
- Beratungsunternehmen
 Publikationen von Wirtschaftsverbänden
 Demographische Indikatoren internationaler Organisationen
 Akademische Publikationen
 Befragung der Mitglieder
 Demographic Risk Indicator
 Medien
 Statistiken von Schweizer Bundesämtern
 Experten-Workshops
 Think Tanks und Forschungsinstitute
 Foren und Events

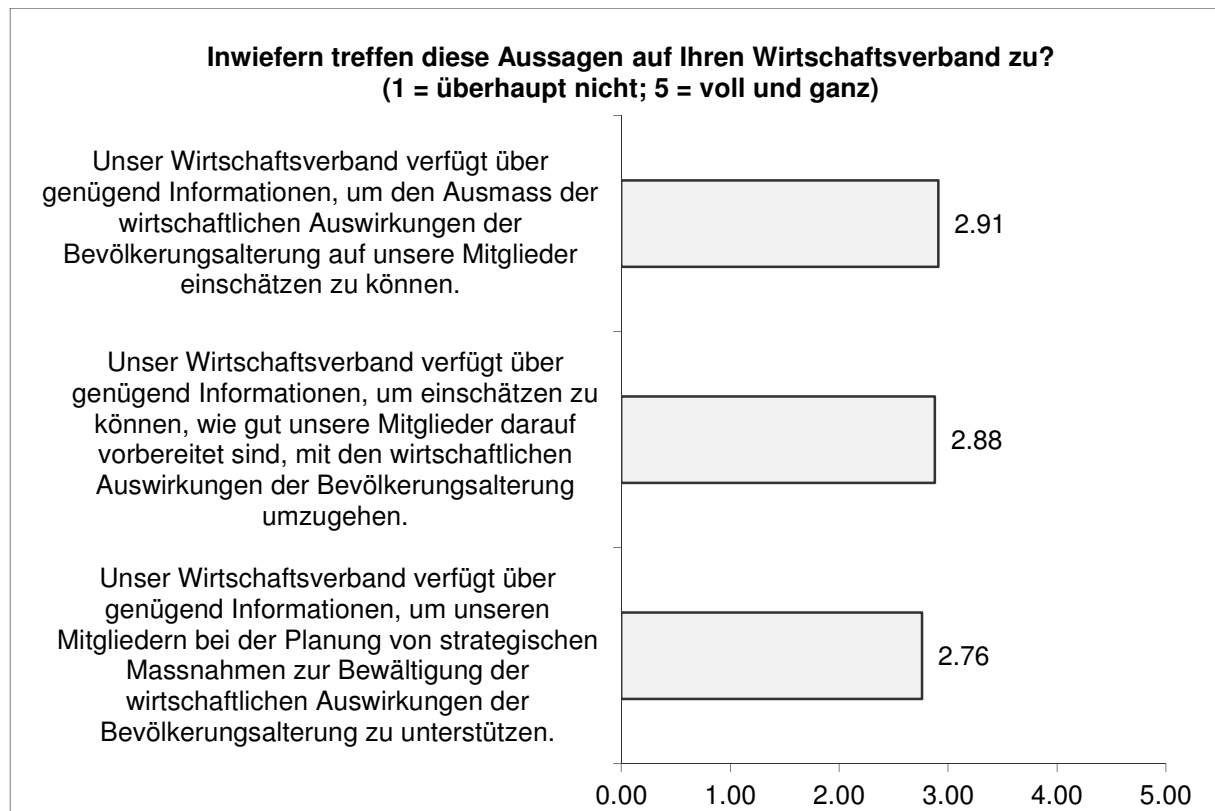
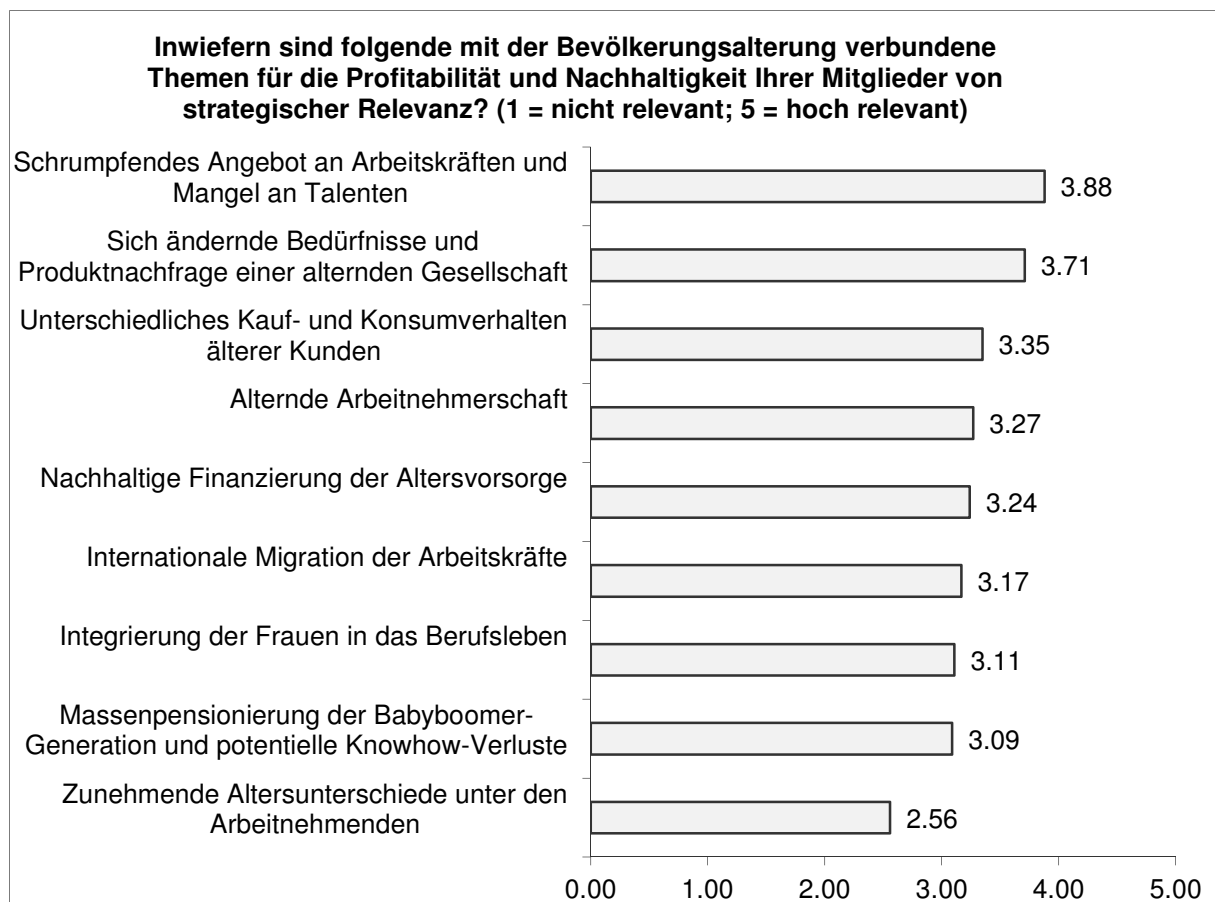
Appendix F: Questionnaire respondents**Question 1**

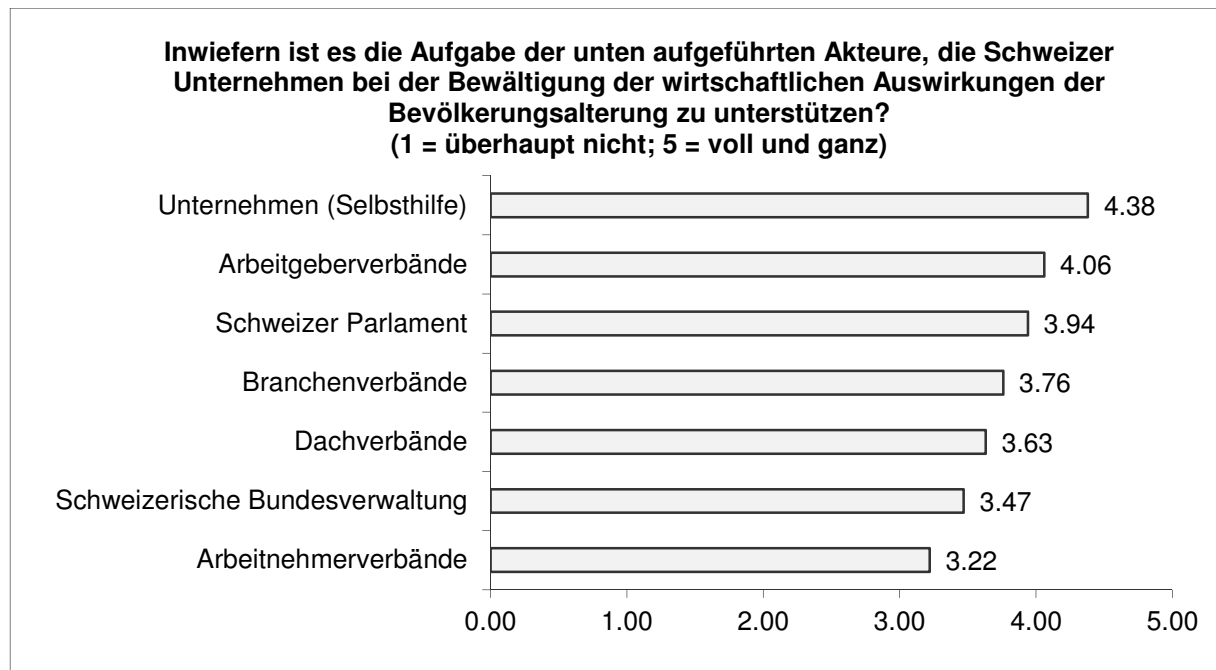
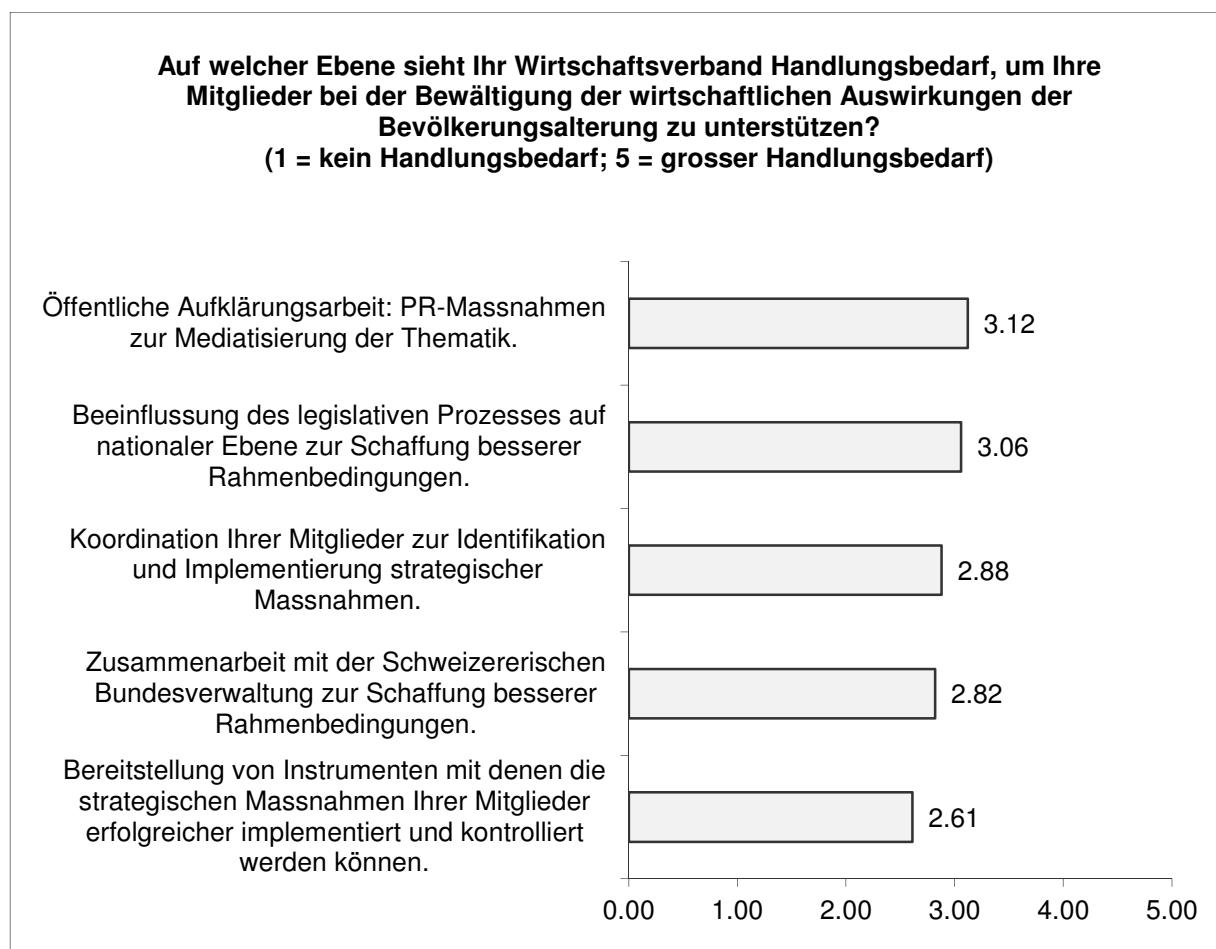
2rad Schweiz - Verband des Zweirad-Fachhandels
AGVS - Auto Gewerbe Verband Schweiz
AGV Banken - Arbeitgeberverband der Banken in der Schweiz
Akustika - Schweizerischer Fachverband der Hörgeräteakustik
H+ - Schweizerischer Spitzenverband der Spitäler, Kliniken und Pflegeinstitutionen
Hotelleriesuisse - Verband der Schweizer Hotellerie
Intergenerika - Vereinigung Schweizer Generika-Produzenten
Interieursuisse - Verband Schweizerischer Einrichtungsfachgeschäfte und Ateliers
SBKV - Schweizerischer Bäcker- und Konditorenmeisterverband
SBV - Schweizer Brauerei-Verband
SBV - Schweizerischer Baumeisterverband
Schweizerischer Markverband
Scienceindustries - Wirtschaftsverband Chemie Pharma Biotech
SDV - Schweizerischer Drogistenverband
SFAMA - Swiss Funds & Asset Management Association
SFGV - Schweizerischer Fitness- und Gesundheitscenter Verband
SKMV - Schweizerischer Kaminfegermeister-Verband
SLV - Schweizer Lederhändler Verband
SOV - Schweizer Optikverband
SVI - Schweizerisches Verpackungsinstitut
SVIT - Schweizerischer Verband der Immobilienwirtschaft
SW - Schweizer Werbung
Swiss Biotech Association
Swissmem - Verband der Schweizerischen Maschinen-, Elektro- und Metall-Industrie
TVS - Textilverband Schweiz
USIC - Arbeitgeberverband der Schweizer Planerunternehmen im Bauwesen
Viscom - Schweizerischer Verband für visuelle Kommunikation
VIPS - Vereinigung Pharmafirmen in der Schweiz
VKS - Verband Kompost- und Vergärwerke Schweiz
VSBS - Verband Schweizer Bildhauer- und Steinmetzmeister
VSEI - Verband Schweizerischer Elektro-Installationsfirmen
VSLF - Verband der Schweizerischen Lack- und Farbenindustrie
VSP - Verband Schweizerischer Privatschulen
VST - Verband Schweizerische Türenbranche
VSV - Verband des Schweizerischen Versandhandels

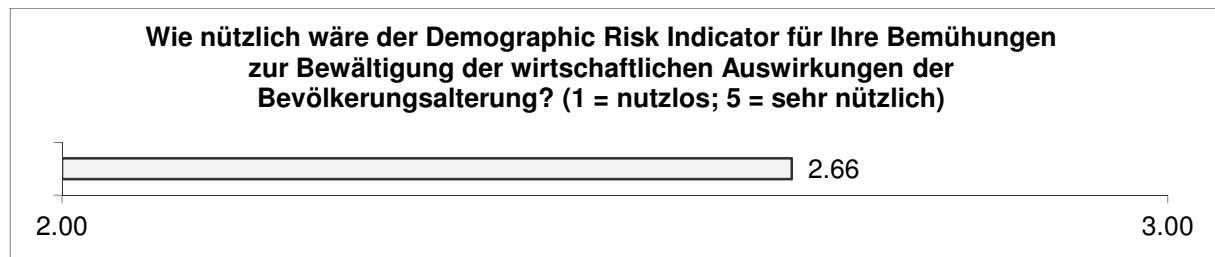
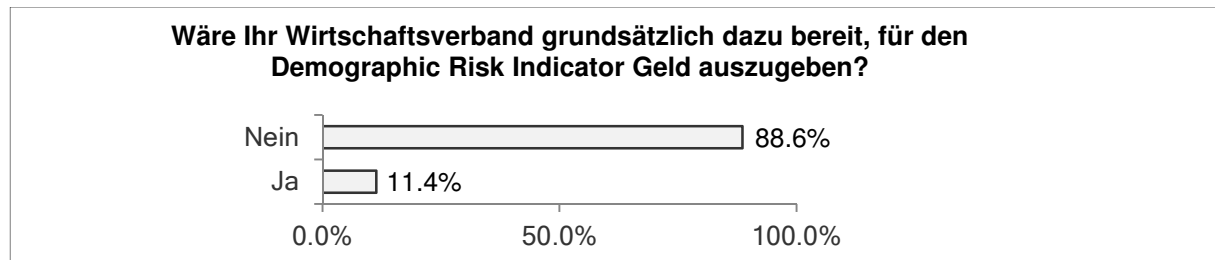
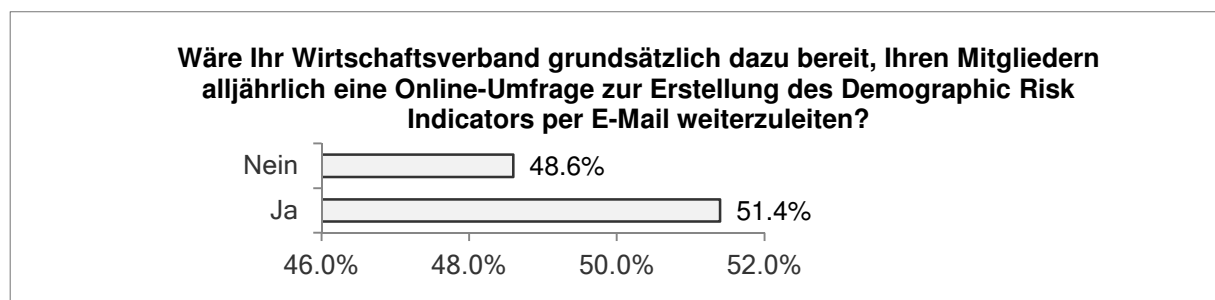
Question 2**Question 3****Question 4**

Question 5**Question 6****Question 7**

Appendix G: Questionnaire results**Question 8****Question 9**

Question 10**Question 11**

Question 12**Question 13**

Question 14**Question 15****Question 16****Question 17**

References

- Aaltonen, M., & Sanders, T. I. (2006). Identifying systems' new initial conditions as influence points for the future. *Foresight*, 8(3), 28–35.
- Adecco. (2006). *Press Release: Adecco Institute introduces demographic fitness index (DFX) as a new corporate performance indicator*. Retrieved from http://www.webwire.com/ViewPressRel.asp?ald=22573#.U3CBcfl_t8E
- Adecco. (2014). We assist your company with unique human capital solutions. Retrieved April 18, 2014, from <http://www.adecco.ch/about-adecco/our-services/default.aspx>
- Adecco Group. (2011). *It's time to manage age*. Retrieved from http://www.adecco.pl/SiteCollectionDocuments/Adecco_WP_Manage_Age_2011.pdf
- Adecco Institute. (2006). *Waking up to Europe's Demographic Challenge: The Demographic Fitness Survey 2006*. Retrieved from <http://www.mojadecco.com/content/mediji/idemograficfitness.pdf>
- Adecco Institute. (2008). *Are Swiss companies prepared for the demographic crunch? Demographic Fitness Survey: Switzerland 2008*. Retrieved from http://www.adecco.ch/Documents/PressReleases/EN/White_Paper_Swiss_DFX_2008.pdf
- Afonso, A., & Papadopoulos, Y. (2013). Europeanization or Party Politics? Explaining Government Choice for Corporatist Concertation. *Governance: An International Journal of Policy, Administration, and Institutions*, 26(1), 5–29.
- Andersen, T. J. (2004). Integrating decentralized strategy making and strategic planning processes in dynamic environments. *Journal of Management Studies*, 41(8), 1271–1299.
- Ansoff, H. I. (1980). Strategic Issue Management. *Strategic Management Journal*, 1(2), 131–148.
- Arvanitis, S., Hollenstein, H., Ley, M., & Stucki, T. (2011). *Die Internationalisierung des Dienstleistungssektors und der Industrie der Schweizer Wirtschaft*. Zurich: KOF Swiss Economic Institute.
- Baldegger, R. (2013). *Swiss International Entrepreneurship Survey 2013*. Freiburg: Hochschule für Wirtschaft Freiburg.
- Becker, W. M., & Freeman, V. M. (2006). Going from global trends to corporate strategy. *McKinsey Quarterly*, (3), 16–27.
- Bible, L., Kerr, S., & Zanini, M. (2006). The balanced scorecard: here and back: from its beginnings as a performance measurement tool. *Management Accounting Quarterly*, 7(4), 18–23.
- Bildungsdirektion Zürich. (2014). Mittelschul- und Berufsbildungsamt. Retrieved March 17, 2014, from http://www.mba.zh.ch/internet/bildungsdirektion/mba/de/ueber_uns/organisation/abteilungen/abteilung_mittelschulen.html

- Blackman, C. (2001). Measuring the art of the long view. *Foresight*, 3(1), 3–4.
- Boehm, S. A., Kunisch, S., & Boppel, M. (2011). An integrated framework for investigating the challenges and opportunities of demographic change. In S. Kunisch, S. A. Boehm, & M. Boppel (Eds.), *From Grey to Silver: Managing the Demographic Change Successfully* (pp. 3–21). Heidelberg: Springer-Verlag.
- Bogner, A., & Menz, W. (2002). Das theoriegenerierende Experteninterview. In A. Bogner, B. Littig, & W. Menz (Eds.), *Das Experteninterview* (pp. 33–70). Wiesbaden: Springer VS.
- Boleat, M. (1996). *Trade association strategy and management*. London: Association of British Insurers.
- Boleat, M. (2001). *Good Practice in Trade Association Governance*. London: Boleat Consulting.
- Boléat, M. (2000). *Strategic Planning in Trade Associations*. London: Boleat Consulting.
- Boléat, M. (2003). *Managing Trade Associations*. London: Trade Association Forum.
- Bonafini, F. (2013). *Demography meets Strategic Planning: Features of a Demographic Risk Indicator Tailored for Companies*. Unpublished master's thesis, University of St. Gallen, St. Gallen, Switzerland.
- Bongaarts, J., & Bulatao, R. A. (2000). *Beyond six billion: Forecasting the world's population*. Washington, D.C.: National Academy Press.
- Boyd, B. K. (1991). Strategic planning and financial performance: a meta-analytic review. *Journal of Management Studies*, 28(4), 353–374.
- Brinckmann, J., Grichnik, D., & Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning–performance relationship in small firms. *Journal of Business Venturing*, 25(1), 24–40.
- Bryman, A. (2004). *Social Research Methods* (2nd ed.). Oxford: Oxford University Press.
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative Research*, 6(1), 97–113.
- Bryman, A., & Bell, E. (2007). *Business Research Methods* (2nd ed.). Oxford: Oxford University Press.
- Burmeister, K., Neef, A., & Beyers, B. (2004). *Corporate Foresight: Unternehmen gestalten Zukunft*. Hamburg: Murmann.
- Butler, R. N. (1975). *Why Survive? Being Old in America*. New York: Harper & Row.
- Capon, N., Fraley, J. U., & Hulbert, J. M. (1994). Strategic planning and financial performance: more evidence. *Journal of Management Studies*, 31(1), 105–110.
- Cash, D. W., Clark, W. C., Alcock, F., Dickson, N., Eckley, N., & Jäger, J. (2002). *Saliency, credibility, legitimacy and boundaries: Linking research, assessment and decision making*. Cambridge: John F. Kennedy School of Government, Harvard University.

- Cheng, M. M., & Humphreys, K. A. (2012). The Differential Improvement Effects of the Strategy Map and Scorecard Perspectives on Managers' Strategic Judgments. *The Accounting Review*, 87(3), 899–924.
- Cherchye, L., Knox Lovell, C. A., Moesen, W., & Van Puyenbroeck, T. (2007). One market, one number? A composite indicator assessment of EU internal market dynamics. *European Economic Review*, 51(3), 749–779.
- Choo, C. W. (1999). The art of scanning the environment. *Bulletin of the American Society for Information Science and Technology*, 25(3), 21–24.
- Clark, R. L., & Ghent, L. S. (2010). Strategic HR management with an aging workforce: Using demographic models to determine optimal employment policies. *Population Research and Policy Review*, 29(1), 65–80.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd ed.). London: SAGE Publications.
- David, T., Ginalski, S., Mach, A., & Rebmann, F. (2009). Networks of Coordination: Swiss Business Associations as an Intermediary between Business, Politics and Administration during the 20th Century. *Business and Politics*, 11(4), 1–40.
- Davis, K. E., Kingsbury, B., & Merry, S. E. (2012). Indicators as a Technology of Global Governance. *Law & Society Review*, 46(1), 71–104.
- Day, G. S., & Schoemaker, P. (2004). Peripheral vision: sensing and acting on weak signals. *Long Range Planning*, 37(2), 117–121.
- Dennis, H., & Thomas, K. (2007). Ageism in the Workplace. *Generations*, 31(1), 84–89.
- Dorussen, H., Lenz, H., & Blavoukos, S. (2005). Assessing the Reliability and Validity of Expert Interviews. *European Union Politics*, 6(3), 315–337.
- Drucker, P. F. (1985). *Innovation and Entrepreneurship: Practice and Principles*. New York: Harper & Row.
- Economiesuisse. (2014). Über uns. Retrieved March 17, 2014, from <http://www.economiesuisse.ch/de/ueberuns/Seiten/default.aspx>
- Econsense. (2008). Demographic Risk Map. Retrieved April 17, 2014, from <http://www.demographic-risk-map.eu/>
- Eichenberger, P., Guex, S., Humair, C., & Mach, A. (2013). Les organisations patronales suisses: Bilan historiographique et perspectives de recherche. *University of Lausanne Political Science Working Paper Series*, (56), 1–40.
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–15.
- Engelman, R., & Leahy, E. (2006). Replacement Fertility : Not Constant, Not 2.1, but Varying with the Survival of Girls and Young Women. *Population Action International Research Commentary*, 1(4), 1–5.

- Epstein, M. J., & Manzoni, J.-F. (1997). *The Balanced Scorecard and Tableau de Bord : A Global Perspective on Translating Strategy into Action. INSEAD Working Paper Series.*
- Flick, U. (2006). *An introduction to qualitative research* (3rd ed.). London: SAGE Publications.
- Flick, U. (2009). *An introduction to qualitative research* (4th ed.). London: SAGE Publications.
- Foddy, W. H. (1993). *Constructing questions for interviews and questionnaires: theory and practice in social research.* Cambridge: Cambridge University Press.
- Franceschini, F., Galetto, M., Maisano, D., & Mastrogiacomo, L. (2008). Properties of performance indicators in operations management: A reference framework. *International Journal of Productivity and Performance Management*, 57(2), 137–155.
- Fuller, R. B. (1981). *Critical Path.* New York: St. Martin's Press.
- Global Footprint Network. (2014). Ecological Footprint. Retrieved April 14, 2014, from <http://www.footprintnetwork.org/>
- Godet, M. (2001). *Creating futures: Scenario Planning as a Strategic Management Tool.* London: Economica.
- Godkin, L., & Allcorn, S. (2008). Overcoming Organizational Inertia : A Tripartite Model for Achieving Strategic Organizational Change. *Journal of Applied Business and Economics*, 8(1), 82–94.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255–274.
- Gruber, M., & Venter, C. (2006). Die Kunst, die Zukunft zu erfinden. Theoretische Erkenntnisse und empirische Befunde zum Einsatz des Corporate Foresight in deutschen Großunternehmen. *Zeitschrift Für Betriebswirtschaftliche Forschung*, 58(7), 958–984.
- Hák, T., & Janoušková, S. (2012). *Review report on Beyond GDP indicators: categorisation, intentions and impacts.* Retrieved from www.brainpoolproject.eu
- Hamm, I., Seitz, H., & Werding, M. (2008). *Demographic change in Germany: the economic and fiscal consequences.* Heidelberg: Springer-Verlag.
- Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American Journal of Sociology*, 82(5), 929–964.
- HelpAge. (2013). Global Age Watch. Retrieved April 17, 2014, from <http://www.helpage.org/global-agewatch/>
- Hiltunen, E. (2008). The future sign and its three dimensions. *Futures*, 40(3), 247–260.
- Hines, A. (2002). A practitioner's view of the future of futures studies. *Futures*, 34(3-4), 337–347.

- Hodgkinson, G. P., & Wright, G. (2002). Confronting Strategic Inertia in a Top Management Team: Learning from Failure. *Organization Studies*, 23(6), 949–977.
- Höpflinger, F. (2010). Postwachstumsgesellschaft Alterssicherungssysteme: Doppelte Herausforderung von demografischer Alterung und Postwachstum. In I. Seidl & A. Zahrt (Eds.), *Postwachstumsgesellschaft* (pp. 53–63). Marburg: Metropolis-Verlag.
- Horton, A. (1999). Forefront: a simple guide to successful foresight. *Foresight*, 01(01), 5–9.
- Hou, L. (2011). Challenges and Opportunities: The Impacts of Population Aging on Marketing in China and the Chinese Economy. *International Journal of China Marketing*, 1(2), 70–80.
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288.
- Huang, H.-C., Lai, M.-C., Lin, L.-H., & Chen, C.-T. (2013). Overcoming organizational inertia to strengthen business model innovation: An open innovation perspective. *Journal of Organizational Change Management*, 26(6), 977–1002.
- Huber, J., & Groth, H. (2013). Business, Society and Governance in Shrinking Societies: Four Levers of Action for Japan and Switzerland. *The Geneva Association: Life and Pensions Newsletter*, (SC02 February), 1–13.
- Huff, A. S., & Reger, R. K. (1987). A review of strategic process research. *Journal of Management*, 13(2), 211–236.
- Humair, C., Guex, S., Mach, A., & Eichenberger, P. (2012). Les organisations patronales suisses entre coordination économique et influence politique: Bilan historiographique et pistes de recherche. *Vingtième Siècle. Revue D'histoire*, 29(3), 115–127.
- Hutzschenreuter, T., & Kleindienst, I. (2006). Strategy-Process Research: What Have We Learned and What Is Still to Be Explored. *Journal of Management*, 32(5), 673–720.
- Iasiello, B. (2008). *What makes a successful set of indicators ?* Retrieved from <http://www.oecd.org/site/progresskorea/globalproject/43361754.pdf>
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), 14–26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1(2), 112–133.
- Kaplan, R. S., & Norton, D. P. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 71(5), 134–140.
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 74(1), 75–85.
- Kaplan, R. S., & Norton, D. P. (2000). Having trouble with your strategy? Then map it. *Harvard Business Review*, 78(5), 167–176.

- Keely, C. B. (2009). Replacement Migration. In P. Uhlenberg (Ed.), *International Handbook of Population Aging* (pp. 395–403). Dordrecht: Springer.
- Kelley, A. C., & Schmidt, R. M. (2005). Evolution of recent economic-demographic modeling: A synthesis. *Journal of Population Economics*, 18(2), 275–300.
- Kohlbacher, F. (2006). The Use of Qualitative Content Analysis in Case Study Research. *Forum: Qualitative Social Research*, 7(1), 1–23.
- Kürschner, S., & Günther, T. (2012). Design parameters of the strategic planning process and organizational performance—a quantitative analysis of empirical research. *Journal Für Betriebswirtschaft*, 62(1), 5–44.
- Kvale, S. (2007). *Doing Interviews*. London: SAGE Publications.
- Lawrie, G., Kalff, D., & Andersen, H. (2005). Balanced Scorecard and Results-Based Management. *2GC Conference Paper*, (September), 1–17.
- Lechner, C. (2006). *A Primer to Strategy Process Research*. Göttingen: Cuvillier Verlag.
- Lechner, C., & Müller-Stewens, G. (2000). Strategy Process Research: What do we know, what should we know? In S. B. Dahiya (Ed.), *The current state of business disciplines* (pp. 1863–1893). Rohtak: Spellbound Verlag.
- Lee, H. (2013). *Global Risks 2013*. Geneva: World Economic Forum.
- Lee, R. (2003). The Demographic Transition: Three Centuries of Fundamental Change. *The Journal of Economic Perspectives*, 17(4), 167–190.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). A typology of mixed methods research designs. *Quality & Quantity*, 43(2), 265–275.
- Liebl, F., & Hermanns, C. (1996). Der Kampf um die Zukunft. *Absatzwirtschaft*, 8, 48–55.
- Liebl, F., & Schwarz, J. O. (2010). Normality of the future: Trend diagnosis for strategic foresight. *Futures*, 42(4), 313–327.
- Lochbrunner, V. (2006). *Integrating trends into strategy formation*. Unpublished master's thesis, University of St. Gallen, St. Gallen, Switzerland.
- Major, E. J., & Cordey-Hayes, M. (2000a). Engaging the business support network to give SMEs the benefit of foresight. *Technovation*, 20(11), 589–602.
- Major, E. J., & Cordey-Hayes, M. (2000b). Knowledge translation: a new perspective on knowledge transfer and foresight. *Foresight*, 2(4), 411–423.
- Makridakis, S. (2004). Foreword: foresight matters. In H. Tsoukas & J. Shepherd (Eds.), *Managing the future-foresight in the knowledge economy* (pp. XIII–XIV). Oxford: Blackwell Publishing.
- Masshardt, N. (2014). Nadine Masshardt. Retrieved from <http://www.nadinemasshardt.ch/>

- May, J. F. (2012). *World Population Policies: Their Origin, Evolution, and Impact*. Dordrecht: Springer.
- May, J. F. (2013). *Agir sur les évolutions démographiques*. Bruxelles: Académie royale de Belgique.
- Mayring, P. (2000). Qualitative Content Analysis. *Forum: Qualitative Social Research*, 1(2), 105–114.
- Merry, S. E. (2011). Measuring the World. *Current Anthropology*, 52(S3), S83–S95.
- Meuser, M., & Nagel, U. (2002). ExpertInneninterviews: Vielfach erprobt, wenig bedacht. In A. Bogner, B. Littig, & W. Menz (Eds.), *Das Experteninterview* (pp. 71–93). Wiesbaden: Springer VS.
- Meuser, M., & Nagel, U. (2010). ExpertInneninterview: Zur Rekonstruktion spezialisierten Sonderwissens. In R. Becker & B. Kortendiek (Eds.), *Handbuch Frauen- und Geschlechterforschung: Theorie, Methoden, Empirie (Vol. 35)* (3rd ed., pp. 376–379). Wiesbaden: Springer VS.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2013). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.). London: SAGE Publications.
- Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review*, 72(1), 107–114.
- Morschhäuser, M., & Sochert, R. (2006). *Healthy Work in an Ageing Europe*. Essen: European Network for Workplace Health Promotion.
- Mrsnik, M. (2010). *Global Aging 2010: An Irreversible Truth*. London: Standard & Poor's.
- Müller, A. W. (2008). *Strategic Foresight: Prozesse strategischer Trend- und Zukunftsforschung in Unternehmen*. Unpublished doctoral thesis, Universität St. Gallen, St. Gallen, Switzerland.
- Müller-Stewens, G., Mueller, A., Lüders, V., & Lu, V. (2012). The Management of Strategic-Foresight Activities: Evidence from Large European Multinationals. In S. N. Grösser & R. Zeier (Eds.), *Systemic Management for Intelligent Organizations* (pp. 63–82). Heidelberg: Springer-Verlag.
- Müller-Stewens, G., & Müller, A. (2010). Strategic Foresight–Trend-und Zukunftsforschung als Strategieinstrument. In M. Reimer & S. Fiege (Eds.), *In Perspektiven des Strategischen Controllings* (pp. 239–257). Wiesbaden: Gabler.
- Munda, G., & Nardo, M. (2003). *On the Methodological Foundations of Composite Indicators Used for Ranking Countries*. Ispra: Joint Research Centre of the European Communities.
- Nag, R., Hambrick, D. C., & Chen, M. J. (2007). What is strategic management, really? Inductive derivation of a consensus definition of the field. *Strategic Management Journal*, 28(9), 935–955.

- Naisbitt, J. (1982). *Megatrends: Ten New Directions Transforming Our Lives*. New York: Warner Books.
- Nardo, M., Saisana, M., Saltelli, A., Tarantola, S., Hoffman, A., & Giovannini, E. (2008). *Handbook on constructing composite indicators: methodology and user guide*. Paris: OECD.
- Oesch, D. (2007). Weniger Koordination, mehr Markt? Kollektive Arbeitsbeziehungen und Neokorporatismus in der Schweiz seit 1990. *Swiss Political Science Review*, 13(3), 337–368.
- Oomens, M. J., & van den Bosch, F. A. (1999). Strategic Issue Management in Major European-Based Companies. *Long Range Planning*, 32(1), 49–57.
- Patnaik, R. (2012). Strategic Planning Through Complexity : Overcoming Impediments to Forecast and Schedule. *IUP Journal of Business Strategy*, 9(1), 27–36.
- Perlitz, M., Schulze, L., & Wilke, C. B. (2010). The demographic and economic transition in Central and Eastern Europe – Management implications. *Journal for East European Management Studies*, 15(2), 149–176.
- Porter, T. M. (1996). *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press.
- Rigby, D. K. (2013). *Management Tools 2013*. Boston: Bain & Company.
- Rohrbeck, R. (2011). *Corporate foresight: Towards a maturity model for the future orientation of a firm*. Heidelberg: Springer-Verlag.
- Rohrbeck, R., & Gemünden, H. G. (2011). Corporate foresight: Its three roles in enhancing the innovation capacity of a firm. *Technological Forecasting and Social Change*, 78(2), 231–243.
- Saltelli, A. (2007). Composite Indicators between Analysis and Advocacy. *Social Indicators Research*, 81(1), 65–77.
- Saritas, O., & Smith, J. E. (2011). The big picture—trends, drivers, wild cards, discontinuities and weak signals. *Futures*, 43(3), 292–312.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Essex: Pearson Education.
- Schwab, K. (2013). *The Global Competitiveness Report 2013-2014*. Geneva: World Economic Forum.
- Schweizerischer Arbeitgeberverband. (2014). Ältere Arbeitnehmende. Retrieved March 17, 2014, from <http://www.arbeitgeber.ch/de/arbeitsmarkt/beschaeftigung/aeltere-arbeitnehmer>
- Slaughter, R. A. (1993). Looking for the real megatrends. *Futures*, 25(8), 827–849.
- Slaughter, R. A. (1997). Developing and applying strategic foresight. *ABN Report*, 5(10), 13–27.

- Slaughter, R. A. (1999). A new framework for environmental scanning. *Foresight*, 1(5), 441–451.
- Swiss Confederation. (2014). Commissions extraparlémentaires. Retrieved April 14, 2014, from <http://www.admin.ch/ch/f/cf/ko/statgremien.html>
- Swiss Federal Statistical Office. (2011). Marktwirtschaftliche Unternehmen nach Wirtschaftsabteilungen und Grössenklasse. Retrieved January 14, 2014, from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/02/blank/data.html>
- Swiss Federal Statistical Office. (2012a). Demos: Active Ageing. *Demographic Information Newsletter*, (2/May), 1–16.
- Swiss Federal Statistical Office. (2012b). *Switzerland's population 2011*. Neuchâtel: Swiss Federal Statistical Office.
- Swiss Federal Statistical Office. (2014a). Bevölkerung. Retrieved April 14, 2014, from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01.html>
- Swiss Federal Statistical Office. (2014b). Bevölkerung nach Alter und Staatsangehörigkeit. Retrieved January 13, 2014, from http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/02/blank/key/alter/nach_staatsangehoerigkeit.html
- Swiss Federal Statistical Office. (2014c). Internationale Wanderungen nach Staatsangehörigkeit. Retrieved January 13, 2014, from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/07/blank/key/02/01.html>
- Swiss Federal Statistical Office. (2014d). The MONET indicator system. Retrieved March 17, 2014, from <http://www.bfs.admin.ch/bfs/portal/en/index/themen/21/02/01.html>
- Tempest, S., Barnatt, C., & Coupland, C. (2002). Grey advantage: New strategies for the old. *Long Range Planning*, 35(5), 475–492.
- The Economist. (2012). Fertility decline, the demographic dividend, poverty and inequality Demography and inequality. *The Economist*.
- Thorsen, S., Rugulies, R., Løngaard, K., Borg, V., Thielen, K., & Bjorner, J. B. (2012). The association between psychosocial work environment, attitudes towards older workers (ageism) and planned retirement. *International Archives of Occupational and Environmental Health*, 85(4), 437–45.
- Thun, J.-H., Gössler, A., & Miczka, S. (2007). The impact of the demographic transition on manufacturing. Effects of an ageing workforce in German industrial firms. *Journal of Manufacturing Technology Management*, 18(8), 985–999.
- Tošović Stevanović, A. (2011). Comparative analysis of indicators of international competitiveness. *Megatrend Review*, 8(2), 407–420.
- Trochim, W. M. K. (2006). Descriptive Statistics. *Research Methods Knowledge Base*. Retrieved from <http://www.socialresearchmethods.net/kb/statdesc.php>

- Uhlenberg, B. P. (2013). Demography Is Not Destiny : The Challenges and Opportunities of Global Population Aging. *Generations*, 37(1), 12–18.
- United Nations. (2009). *World Population Ageing*. New York: United Nations.
- United Nations. (2014a). Active Ageing Index. Retrieved April 14, 2014, from <http://www1.unece.org/stat/platform/display/AAl/Active+Ageing+Index+Home>
- United Nations. (2014b). Human Development Reports. Retrieved April 14, 2014, from <http://hdr.undp.org>
- United Nations. (2014c). International Day of Older Persons. Retrieved May 07, 2014, from <http://www.un.org/en/events/olderpersonsday/>
- Universität Wuppertal. (2014). WAI-Netzwerk Deutschland. Retrieved April 17, 2014, from <http://www.arbeitsfaehigkeit.uni-wuppertal.de/index.php?der-wai>
- University of Zürich. (2010). Demographischer Wandel. *Economic and Social History Online*. Retrieved January 13, 2014, from <http://www.eso.uzh.ch/modul2/9.html?lesson.section=unit§ion.label=DemoWandel>
- Van der Eerden, C., & Saelens, F. H. (1991). The use of science and technology indicators in strategic planning. *Long Range Planning*, 24(3), 18–25.
- Van der Heijden, K. (2004). Afterword: Insights into foresight. In H. Tsoukas & J. Shepherd (Eds.), *Managing the Future: Foresight in the Knowledge Economy* (pp. 204–211). Oxford: Blackwell Publishing.
- Vecchiato, R., & Roveda, C. (2010). Foresight in corporate organisations. *Technology Analysis & Strategic Management*, 22(1), 99–112.
- Von Groddeck, V., & Schwarz, J. O. (2013). Perceiving megatrends as empty signifiers: A discourse-theoretical interpretation of trend management. *Futures*, 47, 28–37.
- Von Schnurbein, G. (2009). Patterns of Governance Structures in Trade Associations and Unions. *Nonprofit Management & Leadership*, 20(1), 97–115.
- Voros, J. (2003). A generic foresight process framework. *Foresight*, 5(3), 10–21.
- Wilson, C. (2011). Understanding global demographic convergence since 1950. *Population and Development Review*, 37(2), 375–388.
- Wilson, J. W., & Eilertsen, S. (2010). How did strategic planning help during the economic crisis? *Strategy & Leadership*, 38(2), 5–14.
- Wong, C. (2003). Indicators at the crossroads: Ideas, methods and applications. *Town Planning Review*, 74(3), 253–279.
- Zhou, P., Fan, L.-W., & Zhou, D.-Q. (2010). Data aggregation in constructing composite indicators: A perspective of information loss. *Expert Systems with Applications*, 37(1), 360–365.

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