

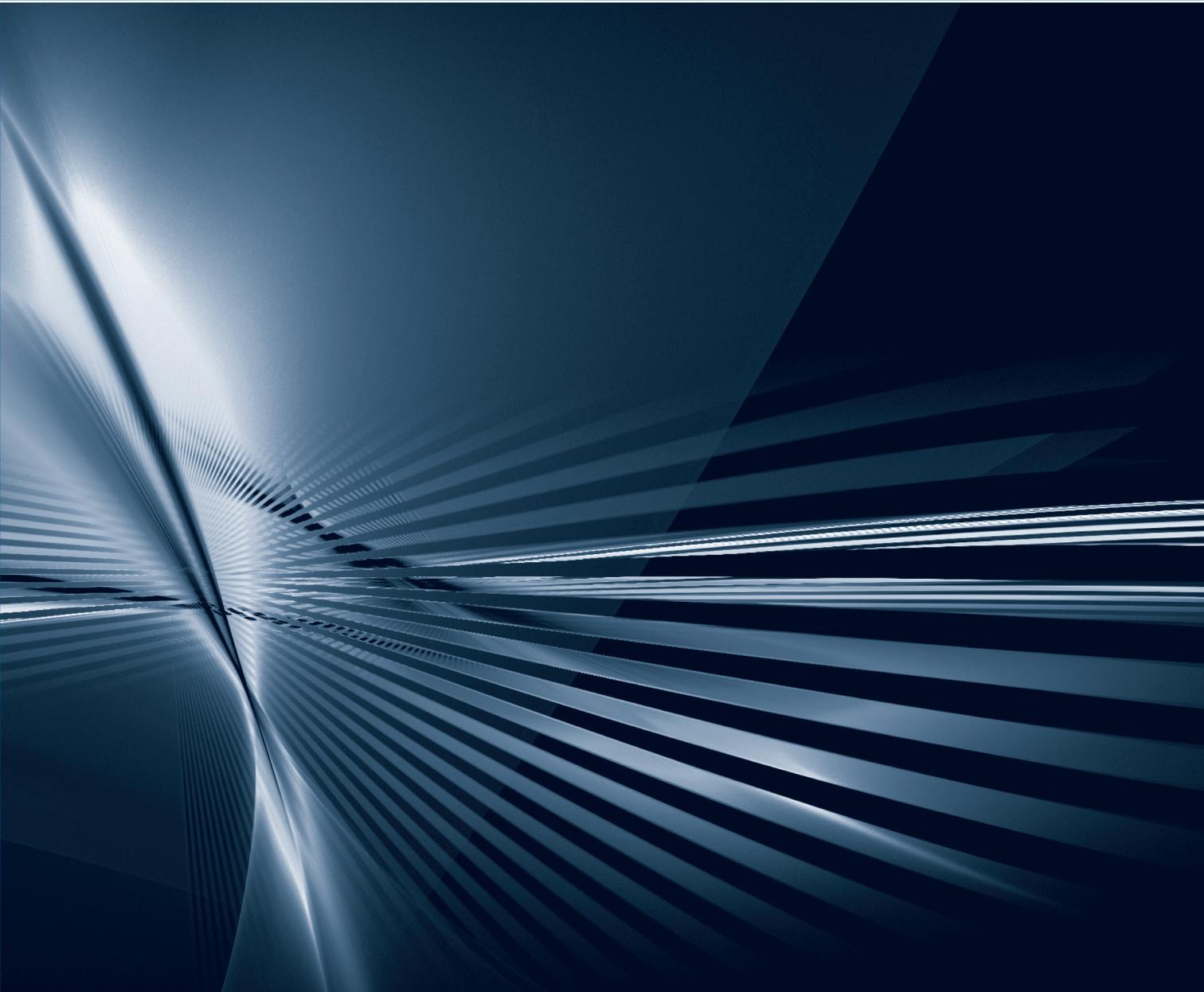
# ORGANIZACIJA

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# The Prospects for Consumer-Oriented Social Media

Roger Clarke

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**Background and Purpose:** The term ‘social media’ refers to a cluster of applications and online services that support human interaction and content broadcasting and sharing. Current services are isolated islands or ‘walled gardens’, and are based on a business model that is highly exploitative of individuals and their data.

**Design/Methodology/Approach:** Surveys of the refereed literature have been undertaken on several occasions during the period 2012-13. Reviews were conducted of social media services that are reasonably described as ‘consumer-oriented’. Media reports on those services were uncovered. The available information was then subjected to analysis, including reflection based on prior research conducted by the author.

**Results:** Required characteristics of consumer-oriented social media, and barriers to emergence and adoption of such services were identified. That provided a basis for proposing means to overcome those barriers. Key impediments to the emergence of such services were identified, and means of overcoming the impediments outlined.

**Conclusion:** An alternative, consumer-oriented approach is feasible, involving open architecture, inter-operability and portability features, fair terms and privacy-sensitivity.

**Keywords:** Social media, social networking service, interoperability, terms of service, privacy

## 1 Introduction

A proportion of users understand that they are being exploited by social media service providers. The boldness and even arrogance of many of those providers have given rise to a growing body of utterances by influential commentators, which has caused a lot more users to become aware of the extent of the exploitation. Consumer and privacy issues are legion, and give rise to doubts about whether sufficient trust exists to sustain the momentum achieved during the first decade of social media usage.

The research reported on in this paper was motivated by the need to move beyond mere criticism of existing social media services. The research builds on a substantial prior program of research and publication in related areas, which has given rise to a dozen refereed papers over the last decade. The research question that this project sought an answer to was ‘How can consumer-oriented social media be achieved?’. This was decomposed into the following sub-questions:

- What are the desirable features of consumer-oriented social media?
- What impediments exist to the emergence of such services?
- What means are available to overcome those impediments?

Surveys of the refereed literature have been undertaken on several occasions during the period 2012-13. Despite the vast amount published on social media, the aspects being considered here are not yet an established field of research. The majority of social science and business literature works within the industry’s existing frame of reference, rather than questioning its underlying assumptions. In more technical areas, on the other hand, a limited literature exists.

Surveys were conducted of social media services that are reasonably described as ‘consumer-oriented’. A moderate number have been conceived, and some have been launched; but none appear to have reached a critical mass of users or traffic. In order to complement the limited relevant literature and empirical base, surveys were also undertaken of media reports. This is particularly important in a field that is so

highly dynamic and where a lag of 2-3 years exists between developments occurring and refereed articles being published that examine those developments.

The available information was then subjected to analysis, including reflection based on prior research conducted by the author. This enabled the identification of required characteristics of consumer-oriented social media, and of barriers to emergence and adoption of such services. That provided a basis for the postulation of means to overcome those barriers.

The following section examines the nature of social media, and distinguishes genres. This leads to the identification of five clusters of characteristics that would together deliver an appropriate orientation towards consumer needs. Key impediments that have held back the emergence of such services are then outlined, and possible means of overcoming them are presented.

## 2 Social Media

This section reviews the origins and nature of social media services, and proposes a classification scheme for service-features. It also considers the means whereby service-providers fund their operations. Consideration is also given to the adaptation to the mobile context that is currently in train, which involves increasing location-awareness among social media services.

### 2.1 Definition and Categorisation

Searches for formal literature that uses the term ‘social media’ in the relevant way have uncovered very little prior to 2004. Even the term ‘social networking’ only emerged about that time – although there is a prior literature on the notion of ‘social networks’ (e.g. Rheingold 1993, Wilde & Swatman

1999). The ‘social media’ meme emerged in conjunction with the ‘Web 2.0’ notion, during 2004-05 (O’Reilly 2005). As shown by Clarke (2008b), there was little terminological clarity or coherence during the first several years of discussion of the approaches adopted by marketers during this period.

Even in 2010, the available definitions remained primitive, e.g. “Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan & Haenlein 2010, p.61). Those authors did, however, apply theories in the field of media research (social presence, media richness) and social processes (self-presentation, self-disclosure), in order to propose the classification scheme in Table 1.

The Kaplan & Haenlein classification scheme is a good fit to the perspectives of corporations. On the other hand, through its commitment to the mass-marketing, ‘consumer as prey’ tradition, it fails to adequately reflect the interests of the users who are exploited by social media service providers. A classification scheme was accordingly sought that is oriented towards the interests of the users of social media. No appropriate model came to light in the literature. The approach adopted was therefore to search for and inspect lists of services described as social media, and identify their key characteristics from a user’s perspective.

During the process, reference was made to a related scheme developed two decades earlier in Clarke (1994). This included a large number of the concepts evident in the ‘social media’ cluster. Ideas that were not evident two decades ago were glogs, wikis, crowdsourcing, folksonomies, indicator-sharing, and high-quality animation and hence avatars. The classification scheme arising from that study is depicted in Table 2. It is based on two factors: the cardinality of the relationship among the parties, and the nature of the exchange.

Table 1: Kaplan & Haenlein (2010)’s Categorisation of Social Media

		Social presence / Media richness		
		Low	Medium	High
Self-presentation / Self-disclosure	High	Blogs	Social networking sites (e.g. Facebook)	Virtual social worlds (e.g. Second Life)
	Low	Collaborative projects (e.g. Wikipedia)	Content communities (e.g. YouTube)	Virtual game worlds (World of Warcraft)

Table 2: A Participant-Oriented Categorisation of Social Media

Category	Cardinality	Nature of the Exchange	Examples
Interaction (Semi-Closed)	1 ↔ 1 OR 1 ↔ few		Exh 3A
Broadcast (Open)	1 → many		Exh 3B
Collaboration or Sharing (Semi-Open or Open)	1 ↔ few or many	Content	Exh 3C
		Indicator	
		Action	

Within each of the major categories, a variety of tools are available. These differ in terms of the *a*/synchronicity of the communications, the nature of the exchange – including syntactic aspects such as whether it comprises text, sound, image and/or video, and semantic aspects such as the implications of the content – and the key functionality that they offer. Some are inter-personal messaging tools, whereas others are content-publishing tools – many of which also offer content-preparation functionality.

Some are applications of ‘crowdsourcing’ (Howe 2006), enabling large-scale aggregation of, in some cases, substantial content (e.g. Wikipedia), but in many cases much more limited signals such as declarations of approval or disapproval, or actions in an online game.

Appendices 1, 2 and 3 present the currently-available service-genres in the approximately chronological order in which they emerged, together with examples of each genre. The classification scheme provided in Table 2 and the Appendices distinguishes functions. A great many social media services – especially those that have survived longer than 1-2 years – have adapted and expanded, and hence offer multiple functions. Any given social media service may therefore appear as an example in multiple categories.

## 2.2 The Conventional Business Model

The term ‘business model’ refers to “a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams ... the missing link between strategy and business processes” (Osterwalder & Pigneur 2002), or “the method of doing business by which a company can sustain itself -- that is, generate revenue” (Rappa 2003). Rappa went further, by distinguishing a set of categories, comprising Brokerage, Advertising, Infomediary, Merchant, Man-

ufacturer (Direct), Affiliate, Community, Subscription and Utility. A useful simplification that has been applied in a variety of eBusiness contexts is that a business model is the answer to the question ‘Who pays, for what, to whom, and why?’ (Clarke 2004b). The categories in Bambury (1998) have a close fit to that form.

The earliest reference on business models for social media is usually regarded as being O’Reilly (2005). The widespread understanding is that “social networking sites can generate revenues through advertising, subscription, and transaction models” (Enders et al. 2008). More specifically, several variants of the advertising agency business model are applied, which involve renting out space on pages on web-sites, usefully referred to as an ‘advertising syndication’ approach (Clarke 2008b, s. 4.2). The model’s downsides for consumers are discussed below.

Marketer enthusiasm for so-called ‘Web 2.0’ business models has attracted criticism, e.g. “We need to carefully dismantle the claims of Wikinomics, ‘We-Think’ and Convergence Culture in order to better understand the kind of brave new worlds to which we are being welcomed” (van Dijck & Nieborg 2009), and “[business models for] monolithic, company-owned social networking websites ... are generally based on gathering, using, and monetizing data about you” (Esguerra 2011).

More specifically, the model depends on the following propositions:

- individuals’ voyeuristic tendencies are engaged by conveying the message that ‘you will find something interesting here’
- ‘you will find something interesting here’ is a self-fulfilling prophecy, because the exhibitionist tendencies of many of the people who come result in them contributing ‘something interesting’:
- about themselves; and
- about other people
- people who come to the site can be enticed to click on advertisements
- the information available about each person can be used as a basis for selecting the ads that appear on their screen, which is referred to as ‘targeted advertising’
- clicks on advertisements can be ‘monetised’, i.e. revenue can be gained from them
- revenue and market-share reflect the accuracy of the targeting
- the accuracy of the targeting depends on the volume and the nature of information available about each individual.

Mainstream, exploitative social media service providers have available to them the profile-data that each individual has supplied, the content that they have posted – whether publicly or ‘privately’, their online behaviour while using the service, in some cases their online behaviour more generally, plus the information disclosed by other users about them.

In addition to the manipulation of consumer behaviour that is inherent in targeted advertising, substantial privacy intrusions arise, and so do freedom of expression issues: “The social networking company might cause you to overshare information that you don’t want shared, or might disclose your information to advertisers or the government, harming your privacy. And conversely, the company may force you to un-share by deleting your profile, or censoring information that you want to see make it out into the world, ultimately curbing your freedom of expression online. And because the company may do this, governments might attempt to require them to do it, sometimes even without asking or informing the end-user” (Esguerra 2011).

### 2.3 Location-Aware Social Media

As is evident from the early dates in Appendices 1-3, the origins of all categories of social media service are in the era of desktops and laptops. The mobile age of smartphones and tablets has been accompanied by a variety of ways in which devices, and hence their users, can be located and tracked (Michael & Clarke 2013).

Throughout the network-based telecommunications era, each person’s network address has always been visible, as a necessary element of the services. Since around the turn of the century, however, each person’s physical address, or geo-location, has progressively become available, and in the case of cellular phone networks knowledge of the geo-location of a device is intrinsic to the operation of the infrastructure. This has enabled a variety of location-based services. Some of them are much-appreciated by consumers, such as those that provide navigation assistance, and assist in emergencies. Novelty apps have attracted attention, such as notification services when someone in the person’s address-book is in their vicinity.

However, all such services, whether appreciated by the user or not, gift rich streams of personal data to service-providers. The primary use of geo-location is in consumer marketing. A further major application of person-location and tracking capabilities is law enforcement and national security (Clarke 1999b, Clarke & Wigan 2011, Michael & Clarke 2013).

A few recently-emerged social media services are ‘born mobile’, with geo-location intrinsic to their design. Four-square is a high-profile example. The challenges that these new entrants posed to established players was so great that they adopted anti-competitive methods, with Dodgeball acquired by Google and closed down, and Gowalla purchased by Facebook and abruptly killed. However, during 2013, Google closed down its interim Latitude service in favour of partially-integrated features within Google+, and Facebook declared itself to be in transition to a much stronger orientation towards mobile users (Womack 2013). Despite the enormous privacy-sensitivity of location data to a wide variety of user-categories, all major social media service-providers encourage disclosure, and have very lax privacy controls.

### 3. The Emergence of Consumer-Oriented Social Media

The social media services that emerged during 2004-2010 benefited from what transpired to be massive user enthusiasm for the services’ mix of voyeurism and exhibitionism, and the thrill of being ‘connected’ with ‘friends’. The widespread and rapid adoption brought with it a range of problems. Concern has been increasingly evident among commentators, and increasingly among users as well (e.g. Opsahl 2010, O’Connor 2012).

There is a considerable lag before critical articles appear in the refereed literature. For example, in the Bled Proceedings, ‘social networking’ appeared for the first time only in 2008 – 4 years after the term entered mainstream use – and during 2009-13 the term appeared in the Abstract of only 12 papers (5.5%). The phrase ‘social media’ first appeared only in 2010, with 13 papers during 2010-13 using it in the Abstract (7.8%). Mentions in the text, however, were consecutively 6, 11, 20 and 15 (i.e. 33% of all papers during that period).

A review of the above Bled papers found that all adopted a business perspective, and none addressed the topic focussed on in the present paper. In order to supplement the limited academic literature, articles in the technical media have been used. In addition, a review was undertaken of the considerable number of tools, prototypes and services that have emerged that are intended to be, or are at least projected as being, consumer-friendly. The origins of those projects vary, but an important stimulus has been the desire for tools for communication and collaboration among groups that perceive themselves to be under threat from governments or corporations.

Table 3 presents a list of relevant services, drawn from the formal literature and the media of the period since 2005. The field has featured a scatter of many, small initiatives, and hence an exhaustive list is infeasible. The list is, however, reasonably comprehensive. There are very substantial differences among the projects in the list. Some are user-facing, whereas others are infrastructural in nature; some are operational, whereas others are ‘in beta’, and some are merely aspirational; and some are related to mainstream commercial products, whereas others expressly blend social with economic objectives, and others are inherently counter-cultural.

An indication of the level of academic interest in these initiatives is provided by searches in Google Scholar. The most prominent of the services is Table 3 is Diaspora\* (Bleicher 2011, Cox 2013 pp. 60-80). Diaspora\* has been addressed in very few academic papers, however, and very few of the papers that mention it have more than a handful of citations. It appears that StatusNet has recently been attracting some attention, in particular as infrastructure over which research experiments can be performed.

Table 3: Consumer-Oriented Social Media Services

Appleseed (defunct?)
Crabgrass (“social networking, group collaboration and network organizing ... tailored specifically to meet the needs of bottom up grassroots organizing”)
cyn.in (“open source collaboration software”)
Diaspora* (“a distributed social network”, “reengineering the way online socializing works”)
Duuit (dormant?)
elgg (“a social networking engine, delivering the building blocks for fully-featured social networks and applications”)
Friendica (“Think WordPress or Drupal, but for social”)
GNU social (merged into StatusNet in June 2013)
identi.ca (previously a front-end to StatusNet, now to pump.io)
Kune (for collaborative management of a collective)
Lorea/N-1, a fork of Elgg
OneSocialWeb (dormant)
OpenSocial (a “standards-based component model for cloud based social apps”)
Personal Containers (“federated data sources”)
pump.io (“Social Server with an ActivityStreams API”)
StatusNet (“Free and Open Source social software”, whose commercial target is enterprise social networking)
Tent (“a protocol for open, decentralized social networking”)
Thimbl (a »distributed micro-blogging platform«)

An indicator of the level of use of these services can be gained from Wikipedia catalogues. Some, but by no means all of them, appear in the Wikipedia comparison of software and protocols for distributed social networking. On the other hand, in February 2014, the Wikipedia catalogue of social networking sites identified only two as having a substantial user-base – Diaspora and identi.ca, each with a little under 400,000 users. Of the other 16 services listed in Table 3, only Friendica even appeared in the catalogue. The catalogue contained 100 services whose user-base was claimed to be in excess of 400,000. Each of the top 60 was shown as having in excess of 5 million users, and their total user-count was shown as 5.5 billion. If those numbers were treated as being authoritative, the users of existing consumer-oriented social media would appear to number of the order of 0.01% of the total social networking services user-base.

The following section utilises the sources discussed above to identify key features of consumer-oriented social media. The subsequent sections then turn to the question of why these services are being used by so few people, and what can be done about the impediments to adoption.

## 4. Features of Consumer-Oriented Social Media

There are five broad areas in which features of existing social media services are at least unsatisfactory in terms of their fit to consumers’ needs, and are arguably seriously detrimental to consumers’ interests. These areas are:

- Distributed Architecture
- Interoperability
- Portability
- Terms of Service
- Privacy

The following sub-sections consider each in turn.

### 4.1 Distributed Architecture

Almost all services to date have used client-server architecture, which provides the service-provider with control over the individual’s content. A fully peer-to-peer (P2P) architecture, on the other hand, leaves that control in each individual’s hands. Alternatively, and more practicably in large-scale applications, semi-P2P architectures distribute content and control across many participant-controlled devices and thereby greatly reduce the power of the service-provider over the users’ data. Narayanan et al. (2012) examines characteristics of distributed architectures for social networking.

The following summary of the argument appears in Moglen (2010):

“... if you have a system which centralizes servers and the servers centralize their logs, then you are creating vast repositories of hierarchically organized data about people ... that they do not control and ... will not understand the comprehensiveness of, the meaningfulness of, ... the aggregability of ...”

“... we built a network out of a communications architecture design for peering which we defined in client-server style, which we then defined to be the dis-empowered client at the edge and the server in the middle. We aggregated processing and storage increasingly in the middle and we kept the logs ... in centralized places far from the human beings who controlled or thought they controlled the operation of the computers that increasingly dominated their lives. This was a recipe for disaster”.

“We need to re-architect services in the Net. We need to re-distribute services back towards the edge. We need to de-virtualize the servers where your life is stored and we need to restore some autonomy to you as the owner of the server ... This is technical challenge for social reason”. “We need a really good webserver you can put in your pocket and plug in any place ... a freedom box”. Inspired by Moglen, and fuelled by one of the many rounds of privacy-invasive behaviour by Facebook, Diaspora\* implemented a distributed architecture (Musiani 2010, Franchi & Tomaiuolo 2012). Indeed, the name implies it, because ‘diaspora’ means dispersion or scattering.

A user may install a ‘pod’ (server) on their own device, or may instead use a ‘community pod’. A pitch by the Diaspora\* team ran “In real life we talk to each other. We don’t need to hand our messages to a hub and have them hand it to our friends. Our virtual lives should work the same way” (Bleicher 2011, p. 50).

## 4.2 Interoperability

Most services have worked very hard to capture their users within a ‘walled garden’, with pages pasted on the inside wall and denied to outsiders, and users’ interactions trapped inside the service-provider’s proprietary messaging scheme. The originator of the Web has criticised this approach for many years, e.g. Cox (2007). He has summarised the problem as follows: “closed, ‘walled gardens’, no matter how pleasing, can never compete in diversity, richness and innovation with the mad, throbbing Web market outside their gates. If a walled garden has too tight a hold on a market, however, it can delay that outside growth” (Berners-Lee 2010, p. 83).

In a consumer-friendly design, not only does the user determine the degree of openness, but the content and messages are open to other people who the user authorises, irrespective of whether those people are connected to, or even members of, that user’s service-provider. This requires the use of open protocols such as http and smtp/pop/imap and/or associated open standards for inter-operation among multiple services. A model of interoperable social media architecture is in Yeung et al. (2009), an outline of the ‘federated social network’ notion is in Esguerra (2011), and further discussion and a case study are in Cabello et al. (2013).

All forms of interoperability are naturally opposed by those with dominant market-shares, because it reduces the exclusivity, and hence the value, of their ‘walled gardens’, increases customer ‘churn’, increases the cost of acquiring and retaining customers, and shifts power back towards consumers.

## 4.3 Portability

Existing services not only trap a user’s profile-data, messages and content inside the provider’s walled garden, but also provide inadequate means for it to be rescued and transferred across into an alternative environment. A limited exception is Google, which supports export of some forms of data from a small number of Google services by means of its Take-out Product. Portability is vital to enable user choice. This is not merely a social argument, because it is well-grounded in economics. Monopoly prevents the efficient use of resources. Competition is crucial, and competition depends heavily on ‘switching costs’ being low. If social media users cannot extract their content and postings, the costs of switching from one service-provider to another include the abandonment of their entire archive.

## 4.4 Terms of Service

The contract between users and the service-provider is dictated by the Terms of Service imposed by that organisation. Previous research has identified a substantial set of problems from the perspective of consumers, across the entire range of consumer protection areas (Clarke 2008a, Svantesson & Clarke 2010, Clarke 2010a, 2010b, 2011).

A ‘Bill of Rights for Users of the Social Web’ (Smarr et al. 2007) asserted rights of ownership (whatever that might mean in the context of data), control of whether and how much personal data is shared with others, and the ‘freedom to grant access’ to personal data. This fell a long way short of being an effective or a sufficient formulation from the viewpoint of consumer rights, however. An alternative and somewhat more workable formulation, arising from a session of the Computers, Freedom & Privacy Conference (CFP 2010), is reproduced in Table 4. Another expression of users’ requirements is in Exhibit 4 of Clarke (2011).

Table 4: A Social Network Users’ Bill of Rights

<b>Honesty:</b> Honour your privacy policy and terms of service.
<b>Clarity:</b> Make sure that policies, terms of service, and settings are easy to find and understand.
<b>Freedom of speech:</b> Do not delete or modify my data without a clear policy and justification.
<b>Empowerment:</b> Support assistive technologies and universal accessibility
<b>Self-protection:</b> Support privacy-enhancing technologies.
<b>Data minimization:</b> Minimize the information I am required to provide and share with others.
<b>Control:</b> Let me control my data, and don’t facilitate sharing it unless I agree first.
<b>Predictability:</b> Obtain my prior consent before significantly changing who can see my data.
<b>Data portability:</b> Make it easy for me to obtain a copy of my data.
<b>Protection:</b> Treat my data as securely as your own confidential data unless I choose to share it, and notify me if it is compromised.
<b>Right to know:</b> Show me how you are using my data and allow me to see who and what has access to it.
<b>Right to self-define:</b> Let me create more than one identity and use pseudonyms. Do not link them without my permission.
<b>Right to appeal:</b> Allow me to appeal punitive actions.
<b>Right to withdraw:</b> Allow me to delete my account, and remove my data.

## 4.5 Privacy

There has been, and continues to be, a great deal of abuse by social media service-providers of their users’ privacy (Handel 2011), and a great deal of media coverage has resulted. There have been claims that privacy norms and laws need to be adapted to reflect the circumstances of social media. For example, Cox (2013, pp. 81-82) refers to data protection,

as that term is implemented in Fair Information. Practices instruments, as ‘institutional privacy’, and identifies additional needs, referred to as ‘social privacy’ relating to the unintended or otherwise inappropriate re-posting of personal data. A deeper assessment is in section 2 of Clarke (2014), and a catalogue of specific issues is provided in a companion Working Paper arising from this research project, in section 4.3 of Clarke (2013).

Existing services offer a variety of features that address particular aspects of the privacy-intrusiveness of exploitative social media. For example, Diaspora\* incorporates the scope to operate isolated sub-services run on a local server (or ‘pod’), better control over groups (called ‘aspects’), recoverability of postings, and specific support for pseudonyms.

## 5. Impediments

There is a degree of clarity about the appropriate features of consumer-oriented social media, and a considerable number of projects have been commenced to deliver services with various sub-sets of those features. A proportion of those services have been launched, yet very few have significant numbers of users. This section draws on the results of the analysis to identify what appear to be the key impediments. One of the few teams to have addressed this question identified the following reasons for the delay in the emergence of ‘free Social Networking Services’: “a lack of material and economic resources; a lack of interest in what many considered to be a teen fad with little potential for the self-organization of civil society; or the inability of social movements to capitalize and innovate on the fundamental principles they practice within cyberspace: participation, horizontality and collective intelligence” (Cabello et al. 2013).

This section addresses the following factors:

- lack of effective demand;
- dominance of the exploitative business model;
- lack of service quality;
- lack of scalability.

### 5.1 Demand

Adoption of a category of services is predicated on the existence of factors that drive users to those services. Effective demand is dependent on a number of pre-conditions, such as awareness, perceived benefits and perceived advantage. It would require empirical research to confirm, but the strong probability is that relatively few users would currently adopt such services even if they were aware of them. There is a lack of understanding of the problems with existing services, and of the availability of alternatives. There are also strong counter-drivers, because existing services are designed to be compelling, to serve individuals’ hedonistic needs, to fit with whatever passes for fashion at the time, and to fit conveniently with individuals’ life-patterns.

A further, important factor is that the network effects involved in social media favour incumbents. As long as the small number of services that have achieved dominant market-share remain closed, ‘walled gardens’ – by denying interoperability and portability – new entrants, both those that are conventionally exploitative and those that are consumer-friendly, are unable to achieve penetration.

### 5.2 Business Model

Although the closedness of the dominant social media providers is a major factor, so too is the success of their business model. Research is needed into the keys to that success. It appears to be a combination of marketing and design that targets individuals’ hedonist impulses and the current penchant for self-exposure and outright exhibitionism, linked with the super-profits that arise from monopoly, and the over-valuation and consequential high capital-raising capabilities that arise from the prospect of super-profits.

A deeper appreciation of the conventional model can be informative to endeavours to develop, promote and sustain services without exploiting personal data in ways that conflict with user’s needs and reasonable expectations.

### 5.3 Quality

Diaspora\* and similar services have suffered from the same problem as most other software developed over the last one to two decades. Software development is dominated by quick-and-dirty coding methods, glorified as ‘rapid application development’, which features the substantial absence of requirements statements, architectural frameworks, and design specifications. This results in a high incidence of design errors, the continual emergence of security vulnerabilities, instability in architecture, and unpredictability of the scope of bug-fixes and changes.

Commercial enterprises that are suitably capitalised and/or achieve substantial revenue flows can limp along for many years, coping with low software quality by throwing resources at the problems. Suppliers of consumer-oriented social media have to date lacked large-scale funding, and are unable to buy their way out of software quality problems. So the service-quality problems remain, fester, damage customer loyalty, and result in drift of users away from the site, which leads to negative network effects, decline, and death.

### 5.4 Scalability

With only rare exceptions, consumer-oriented social media have been developed using tools that are to hand, rather than tools that have been carefully selected to fit the need. Services developed using such tools seldom run efficiently. Those services that achieve significant adoption soon run into the problem that, as demand grows, sometimes exponentially, the inefficient back-end software and data

management cannot support it. It is common for successful commercial services to be in a state of continual redevelopment, including frequent upgrading or replacement of infrastructure, in order to keep the service running as increasing numbers of users adopt it. This requires significant levels of funding, which are generally not available to providers of consumer-oriented social media. As a result, users suffer slow service, customer loyalty is affected, users drift away, and success breeds failure.

## 6. Means of Overcoming the Impediments

For the impediments identified in the previous section to be overcome, it appears that three sets of measures are necessary. Designs need to address needs, public understanding needs to be much-enhanced, and alternative business models need to be articulated and implemented, sufficient to support professional levels of quality and scalability.

### 6.1 Design

In order to project themselves as consumer-oriented, service-providers need to exclude the features that are associated with exploitation, and incorporate a sufficient sub-set of the features described earlier in this paper. Interoperability and portability are highly advisable features. If a distributed architecture is not chosen, then a much larger sub-set of consumer-friendly terms of service and privacy features is likely to be needed.

### 6.2 Understanding

Academics and some of the more thoughtful media commentators have documented the negative aspects of exploitative social media, and the harm that they embody. But intellectual discourse has little impact in the marketplace. Adoption of consumer-oriented social media depends on users feeling the difference, and hearing and seeing the messages, conveyed by people who they regard as influencers, in language that relates to their worlds.

Key aspects of marketing communications theory and practice need to be applied, in order to achieve 'mindshare' among target audiences, and in relevant channels to reach those target audiences. Media are to a considerable extent regurgitators of media releases. Promoters of consumer-friendly social media services need to project themselves as organisations of substance, and present their case in forms that fit to the channels' self-image and formats, and that reflect the fashions of the moment. It is essential to be ready to leverage off the public relations disasters that exploitative social media continually create for themselves. In effect, promotions need to be 'in the can', ready to launch, when an opportunity presents itself.

## 6.3 Alternative Business Models

A new service needs to launch with a critical mass of features, with a user interface that is better than merely adequate, with service-quality comparable to that of existing services, and with the capacity to scale with demand, and to fix bugs, add features, and adapt interfaces (and even offer alternative interfaces). That requires a sufficient investment prior to launch, and a sufficient set of resources during the ramp-up phase.

Many alternative business models are available, well beyond the exploitative model that dominates contemporary social media services. A framework was provided by Exhibit 4 of Clarke (2004b), comprising answers to the questions 'Who pays? What for? To whom? and Why?'. The application of the framework to 'content commons' was documented in Clarke (2007). Examples provided in those articles and the sources that they reference include government support for services that fulfil their mission statements, government subsidies, corporate cross-subsidies (i.e. business enterprises supporting loss-making services that are complementary to their other products and services), sponsorship and patronage e.g. by philanthropic and religious organisations, advertising that offers less-precisely-targeted placements for lower costs than exploitative outlets, and subscription fees for value-added services such as 'vanity press' blogs.

As the benefits of consumer-friendly social media become more widely understood, some mainstream commercial providers may be tempted into the field – particularly those that are unable to gain sufficient market-share to reap monopoly profits. For example, the prospect exists of corporations that sell 'enterprise' products and services supporting gratis open services as a viral marketing channel, promoting the brand and associating a 'feel-good' factor with it.

Naturally, as alternative approaches begin to represent a threat to powerful corporations, countermeasures will be adopted as they seek to protect or at least prolong their monopolies. Because of the scale these organisations have achieved, their economic power over the US Congress, and their surveillance significance to the US Administration, the companies will be able to enlist government support for their stifling of competitors.

Searches have already been undertaken for middle paths, whereby corporations' ability to exploit data can be sustained, while users' control is improved and at least some of the more extreme privacy incursions are reduced. For example, Wilson et al. (2011) proposed "a distributed OSN architecture that significantly improves user privacy while preserving economic incentives for OSN providers ... by using a standardized API to create a competitive provider marketplace for different components of the OSN, thus allowing users to perform their own tradeoffs between cost, performance, and privacy".

However, their Polaris architecture is based on the spurious notion that privacy concerns only arise in relation to a few specific data-items, and that all other data can remain free for exploitation. Other such pseudo-solutions that sustain the dominance of the exploitative business model are bound to emerge.

## 7. Conclusions

Consumer-oriented social media services are needed, as an antidote to the approach adopted by providers during their first decade. Public understanding of the nature of existing social media services appears to be increasing. The dominant service-providers, particularly Facebook and Google, show no signs of reducing the exploitative nature of their business models, and hence it appears likely that the proportion of the customer-base that will seek alternatives will increase. A key question is how consumer-oriented social media services will come into being, and survive long enough, to establish critical mass. The research reported on in this paper has consolidated the information available in the area, and identified the articulation of alternative business models as the single most important factor that will determine ventures' success or failure.

Opportunities for research present themselves in relation to the ease of delivery of infrastructure, adaptability and scalability. Social science research is needed in order to determine the trade-offs among various features. Surveys provide data of only limited quality, and controlled experiments appear to be a much more promising technique. Deep case studies are needed of successful and failed projects. Relevant information generated by well-conceived instrumentalist research could make valuable contributions to overcoming the impediments that have held back the emergence of consumer-friendly social media.

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## Perspektive k potrošniku usmerjenih družabnih medijev

**Ozadje in namen:** Izraz 'družabni mediji' pomeni grozd nalinjskih storitev, ki podpirajo človekovo interakcijo, razširjanje in skupno rabo vsebin. Sedanje storitve so izolirani otoki ali 'ograjeni vrtički' in temeljijo na poslovnem modelu, ki močno izrablja posameznike in njihove podatke.

**Zasnova/metodologija/ pristop:** V času med letoma 2012-13 je bilo narejenih več pregledov literature, ki so se nanašali na družabne medije, ki lahko imenujemo 'potrošniško usmerjene'. Dobljena informacija je bila analizirana, upoštevajoč tudi rezultate avtorjevih predhodnih raziskav.

**Rezultati:** Identificirali smo značilnosti potrošniško usmerjenih družabnih medijev in ovir za delovanje in širšo uporabo teh medijev. S tem smo dobili osnovo, da predlagamo sredstva kako preseči te ovire. Identificirali smo ključne ovire za širjenje teh medijev in predlagali sredstva, kako bi lahko presegli te ovire.

**Zaključek:** Alternativni, k potrošniku usmerjeni pristop je možen, vključuje odprto arhitekturo, interoperabilnost in prenosljivost, poštene pogoje storitev in občutljivost glede zasebnosti.

**Ključne besede:** družabni mediji, storitve družabnih omrežij, interoperabilnost, pogoji storitve, zasebnost.

## Appendices

### Appendix 1: 1-with-1-and 1-with-Few Interaction Tools

- Since the early 1970s, networked text email (asynchronous)
- Since the mid-1970s, networked text chat / IM (synchronous)
- Since the mid-1980s, SMS / texting from mobile phones
- Since the early 1990s, email-attachments in any format (asynchronous)
- Since the early 2000s, voice over the Internet (VoIP and Skype) (synchronous)
- Since the early 2000s, voice tele-conferencing over the Internet (VoIP and Skype) (synchronous)
- Since the mid-2000s, videophone over the Internet (such as Skype Video) (synchronous)
- Since the mid-2000s, video-conferencing (such as Skype Video) (synchronous)

### Appendix 2: 1-to-Many Broadcast Tools

- Since the late 1970s, bulletin boards systems (BBS)
- Since the early 1980s, Usenet / netnews
- Since the mid-1980s, email lists
- Since the early-to-mid-1990s, web-pages
- Since the mid-to-late 1990s, discoverable by means of search-engines (Lycos, Altavista, Google, Bing, etc.)

#### Since the early 2000s:

- blogs (such as WordPress and Blogger). See also the Wikipedia catalogue
- micro-blogs (such as Twitter and Tumblr). See also the Wikipedia catalogue
- glogs (originally 'cyborg-logs' generated by means of wearable wireless webcams – Mann 2002, but recently also retro-nymed as 'graphical blogs')

#### Since the mid-2000s, 'content communities', e.g.

- for images (such as deviantArt, Flickr, Picasa, Pinterest and Instagram). See also the Wikipedia catalogue
- for videos (such as YouTube, Flickr and Instagram). See also the Wikipedia catalogue

- for slide-sets (such as Slideshare). See also the Wikipedia catalogue
- Since the mid-2000s, closed (or 'walled-garden') 'wall-postings' within 'social networking services' (such as Plaxo, MySpace, LinkedIn, Xing, Facebook, Google+ and Foursquare). See also the Wikipedia catalogue

### Appendix 3: 1-with-Many Sharing Tools

#### Content Collaboration

- Since the mid-1990s, wikis, most strikingly in Wikipedia and related communities. See the Wikipedia catalogue
- Since the late 1990s, social news sites, such as Slashdot, Reddit and Newsvine. See also the Wikipedia catalogue
- Since the mid-2000s, online office applications, such as Zoho, Google Docs and MS Live Office

#### Indicator-Sharing

- Since the mid-2000s, 'social bookmarking' (such as Delicious) – short, free-text tags assigned by users to content in order to produce folksonomies that support searching (Smith 2004). See also the Wikipedia catalogue
- Since the mid-2000s, recording of approvals and disapprovals (such as Digg's digging and burying, Reddit's up and down rankings, StumbleUpon's thumbs-up and thumbs-down, Facebook's Like button, and Google+'s +1 button), and more complex 'rating' mechanisms

#### Action, especially that associated with Multi-Player Networked Gaming

- Since the early 1990s, text-based Multi User Dungeons and Dragons (MUDDs)
- Since the early 2000s, social gaming sites such as Friendster
- Since the early 2000s, high-quality animation Massively Multiplayer Online Games (MMOGs), particularly Role-Playing Games (MMORPGs), e.g. World of Warcraft
- Since the early 2000s, online virtual worlds such as Second Life

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# Relationships among Components of Insurance Companies and Services' Quality

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**Background and Purpose:** An increasing number of insurance companies and the intensity of competition in this field require research on customer perceptions of the components of insurance services and insurance company. The objective of this study was to examine the conceptual model and to study the relationships between customer perceptions of the innovation, reputation, adequacy of premium, and adequacy of information about the coverage of insurance services.

**Design/Methodology/Approach:** The research model was tested with structural equation modelling (SEM) with a sample of 200 Slovenian users of insurance services.

**Results:** The results indicated that higher perceived innovation of insurance company was associated with higher perceived reputation of insurance company. In addition, higher perceived reputation of insurance company was associated with higher perceived adequacy of information about the coverage and the premium for insurance services. The study also found that higher perceived adequacy of premium was associated with higher perceived adequacy of information about the coverage of insurance services.

**Conclusion:** The original contribution of this article is also the highlighting of relationship between perceived reputation of insurance company, perceived adequacy of information about the insurance premium and perceived adequacy of information about the coverage of insurance services.

**Keywords:** Insurance services, Innovation, Reputation, Premium, Insurance coverage

## 1 Introduction

In the insurance services market the quality of service is treated comprehensively due to high level of competition, both in terms of organization and of insurance service itself. The motivation for the matter in question therefore arises from the organization and quality of insurance services. Quality of service analysis is an extremely broad scientific field and has been discussed by a great number of researchers (Lorin Purcărea et al., 2013). They associate the concept of quality of service with the various business components such as price, reputation, innovation, etc. (Alhabeeb, 2002; Rahman et al., 2012; Yaşlıoğlu et al., 2013). Researchers often include these organizational components, as well as their users' perception of product quality, in their research concepts (Chang, 2012; Bontis et al., 2007). Researchers associate the reputation of the organization with the perceived quality

of products and purchase intention (Gatti et al., 2012), and less with the perceived adequacy of the information about the core product, such as insurance coverage in insurance services. Researchers include the perceived adequacy of information as a component of quality of service in terms of informational control, either in terms of the organization's activities (Ladhar and Morales, 2008), or of the provision of information about the service (Sureshchandar et al., 2002).

The present research deals with the basic research question of how innovation through the organization's reputation reflects on the perception of quality of service components, by which we mean the adequacy of insurance coverage and the premium for services provided. At the same time, we explore the relationship between the components of organization and those of services, in particular how users perceive the components of insurance services (adequacy of insurance

services premiums and adequacy of information about the coverage of insurance services), if the insurance company is investing in reputation through innovation. Such a treatment is important because many organizations show lack of response to an increasingly demanding market, as well as to stakeholders, due to globalization, technological advances, and innovative approaches. To be competitive the quality has to be systematic, which is impossible without innovation (Mulej, 2013).

Incorporating all these components, the objectives of the present research are (1) to evaluate the conceptual research model, which is based on analysis; (2) to examine the impact of perceived innovation on the perceived reputation of the insurance company; (3) to analyze the impact of the company's perceived reputation on the perception of the adequacy of insurance services premiums; (4) to ascertain the impact of the insurance company's perceived reputation on the perceived adequacy of information about insurance coverage; and (5) to assess the impact of perceived adequacy of premiums on the perceived adequacy of information about coverage.

## 2. Literature review and hypothesis

### 2.1 Perceived innovation

The resource-based view within the strategy literature has argued that sustainable competitive advantage is created primarily from notable innovation and reputation (Kay, 1995). Innovation is an important corporate strategy, one of the options a corporation has in confronting market competition and achieving sustainable management through the process of materializing a brand new idea, different from past ones, by way of production or by making it become tangible (Wu and Lin, 2011). Damapour and Gopalakrishnan (1998), on the other hand, take a further step and define innovation as, "The process of coming up with new concepts, methods, equipment or products". The positive effect of innovation on performance has been proven true in a large number of empirical studies (Khan and Manopichetwattana, 1989). Every organization, whether it is for-profit, not-for-profit, government-sponsored, or nongovernment-sponsored, constantly tries to demonstrate to stakeholders and the public what makes it different and better than other, perhaps competing organizations. In this way innovation comprises a rhetorical situation (i.e. an attempt to shape the environment, not just respond to it) and a response to an exigence (i.e. something is provided for the market to meet what is lacking in it). In other words, innovation is both communicated and perceived (Courtright and Smudde, 2009).

### 2.2 Perceived reputation

Several conceptualizations of corporate reputation and various terms describe the relative standing of organizations.

Prestige, image, reputation, and good will are terms that can all be found in the literature (Henard and Dacin, 2010). Corporate reputation is one of the principal intangible assets a firm possesses (Vicente, 2009). Walsh and Beatty (2007) designate the organizational reputation in the new framework with two kinds of understandings, "first, reputation as a collective phenomenon, and second, as the idea of organizational reputation which has not been conceptualized as a result of consumer reaction perceived from direct and indirect experiential interaction". Corporate reputation is the end result of consumers' accumulation of perceptions regarding how well an organization has met their demands and expectations (Abratt and Kleyn, 2012).

To many organizations, a reputation as an innovative company is something that is both prized and actively sought after. Yet research investigations of the less tangible facets of innovation, including reputation, remain relatively investigated despite their promise as a source of sustainable competitive advantage (Henard and Dacin, 2010). There are several ways of assessing corporate reputation, and innovativeness appears as one of the key criteria for assessing it (Chun, 2006). Fombrun et al. (2000) define reputation as a collective construct that describes the aggregate perception of multiple stakeholders about a company's performance. Correspondingly, they assume that corporate reputation can be explained by products and services: perceptions as to their quality, innovation, value, and reliability. The innovative nature of the firm has been recognized as one of the antecedents of corporate reputation (Vicente, 2009).

The elements of a superior reputation have been explained using words such as "trustworthy and innovative" (Winkleman, 1999). Companies develop winning, positive reputations by both creating and projecting a set of skills that their constituents recognize as unique through innovation, operational excellence, or closeness to the customer (Fombrun, 1996). Keller and Aaker (1998) focus on the offline marketplace, and discover that perceived innovativeness is considered a key competitive weapon and a priority for firms when forging corporate reputations. Laforet (2011) also finds that consumers see the long-term benefits of innovation as satisfying, improving company image and reputation, which confirms the findings of Simpson et al. (2006). Hillestad et al. (2010) have explored "green innovation". Companies may benefit by finding their own innovative approach to environmental awareness that can be useful both for branding and for differentiation purposes, as well as for the development of unique and valuable business models, skills, and operations. Such innovative approaches to environmental awareness can contribute to trustworthiness and a green reputation, and may furthermore stimulate technology development. Ottenbacher and Gnoth (2005) agree that one approach to improving reputation is through innovation, or the ability to develop and launch new and successful services. A positive reputation may be a normal and necessary condition for organizational innovations for survival on the market. Based on the theoretical principles, the following hypothesis is offered:

*H1: The higher the perceived innovation of the insurance company, the higher on average the consumer's perceived reputation of the insurance company.*

### 2.3 Perceived price/insurance premium

Price is the amount of money or goods needed to acquire some combination of other goods and their accompanying services (Hanif et al., 2010). On the other hand, perceived price is defined as customer perception as to what is given up in order to obtain a product or service (Zeithaml, 1988; Lien and Yu, 2001). Researchers often link price with perceived value. The perceived value can be defined as the difference between the benefits perceived by the client and the sacrifices he has to make in order to obtain the product. The price can also have an informational aspect that can lead to favorable perception concerning, e.g., product quality (Costinel et al., 2011). In insurance, the price of coverage is expressed as a premium.

The premium is the consideration paid by the insured to the insurer for the insurance granted under a policy (Gulati, 2007). These premiums create a pool of money that the insurer invests to earn a return, the revenues from which are then used to compensate the insured for losses (Crews, 2010). But the premium must not be equated with the price of insurance, because the former includes expected losses, which are distributed back to the insured (Zweifel and Eisen, 2012). There are two differences between insurance pricing and the pricing function in other industries. The first is that the price for insurance is based on a prediction, and the second that insurance rates are subject to government regulation (Vaughan and Vaughan, 2008).

Researchers have found that the premium is an important determinant of demand for private health insurance (Costa and Garcia, 2003; Šebjan and Bastič 2013). Research has also indicated that when consumers are already inclined to purchase insurance services, the impact of price and that of service quality on their final decision is unequal: consumers give a relatively higher importance to product price (Ulbinaitė and Kucinskiene, 2013).

A reputation is composed of a corporation's unique set of skills in delivering both economic and non-economic benefits (e.g. Fombrun, 1996). In addition, reputation works as a substantial element of value (Hansen et al., 2008) because it helps to create value (Zabala et al., 2005). Organizational ability in terms of functional value is fundamental to corporate reputation (Pomeroy and Johnson, 2009). The benefit of good corporate reputation can be demonstrated in such a way that the organization is freer to put higher prices on its products and services as customers will be willing to pay such prices. As a consequence, customers will prefer to patronize the products and services of the reputable company even when another company's products are available at comparable quality and price (Chibuike, 2011). Ou and Abratt (2006) indicate that correct pricing helps influence

the organization's reputation (e.g. store) favourably. Graham and Bansal (2007) examine the determinants of consumers' reputational perceptions of airlines and the prices they were willing to pay for air tickets.

They found that individuals' perceptions of reputation were highly related to their willingness to pay for tickets. In effect, researchers have found compelling evidence affirming the theory that reputation positively affects both the sale and the price of products/services. In other words, there is a higher likelihood that highly reputable organizations will not only sell their products faster than the less reputable ones, but will be able to do so at a higher price than their less reputable counterparts (Chibuike, 2011). Babić-Hodović et al. (2011) furthermore conclude that the influence of a bank's corporate reputation on consumer perception of value is positive and significant. This means that banks should necessarily keep in mind not only perceived value as such, but also corporate reputation, its management, and also permanent improvements.

The role and importance of reputation increases significantly in service companies whose intangible services (Bromley, 2001; Lovelock, 1999; Parasuraman et al., 1985) affect the higher uncertainty and decision-making risk in the pre-purchase phase (Walsh et al., 2009), and the higher insecurity of potential customers as well. The quality of insurance services includes sensing adequate insurance coverage for risks or dangers to which users are exposed on a daily basis, and detection of relevant information about insurance services (Šebjan et al., 2013). Perception of the quality of products and/or services has a significant impact on the perception of the reputation of the organization (Gatti et al., 2012).

### 2.4 Perceived coverage of insurance services

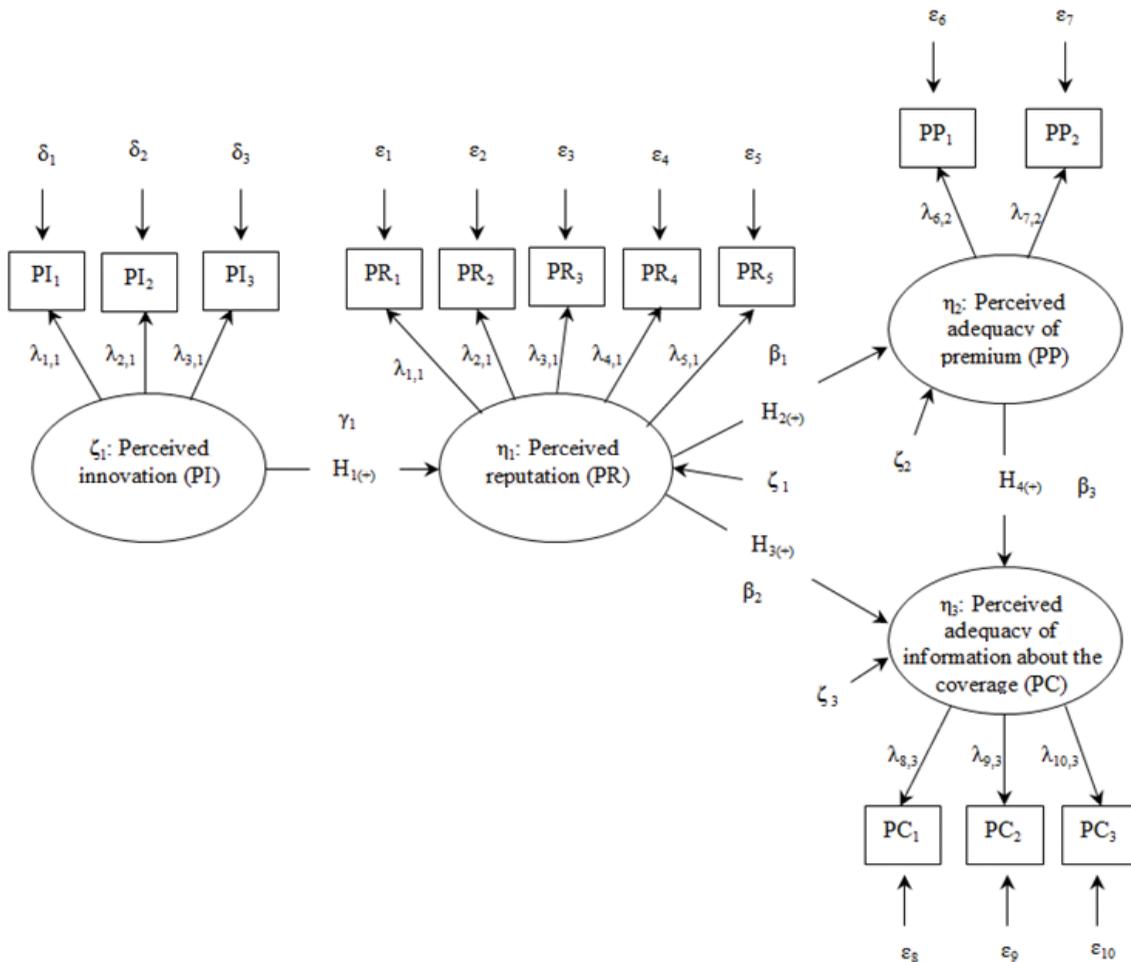
Individuals who pay premiums to the insurer are protected against the risk of financial loss by transferring the risk to a large group of individuals who then share in the loss. Each insurance policy is designed to cover losses resulting from a specific future event such as theft, accident, fire, flood, illness, or death. Insurance coverage is complex, and consumers need information about risks, insurance products, and contract designs, as well as about claims settlement and the investment behavior and financial stability of insurance companies (Eckardt and Rätthke-Döppner, 2010). It is very important that users properly perceive information about insurance coverage for the corresponding perceived insurance premiums offered by insurance companies on the market. Consumers are daily exposed to various risks, so they must ensure proper and adequate insurance coverage. The risk represents a situation in which there is a possibility of loss (Kutty, 2008).

“Risk is a condition in which there is possibility of an adverse deviation from a desired outcome that is expected or hoped for” (Vaughan and Vaughan, 2008). Therefore, customers should be first informed as to perceived risk and then as to appropriate insurance coverage. The reputation of the insurance company has a significant impact on the likelihood that holders of health insurance policies will decide to change providers (Šebjan et al., 2013). Šebjan (2013) finds that the more important the reputation of health insurance is for the users, the higher perceived importance of the additional coverage will be. The perceived reputation of the insurance company therefore has a positive impact on users’ perception of premiums and the adequacy of information provided about coverage, leading us to the following two hypotheses:

*H2: The more positively the reputation of the insurance company is perceived, the greater the perceived adequacy of premiums for insurance services will be.*

*H3: The more positively the reputation of the insurance company is perceived, the greater the perceived adequacy of information about the coverage of insurance services will be.*

In the context of economic sciences in various business areas, researchers associate price with quality of products/services (Chapman and Wahlers, 1999; Rahman et al., 2012) and quality with price of products/services (Alhabeeb, 2002). In the area of insurance services, Bazenčić (2006) discusses the relationship between the insurance premium and quality of life insurance, but from the perspective of the user’s willingness to pay a higher premium for higher-quality life insurance.



**Remarks:**

PI1 – PI3: indicators of perceived innovation of insurance company; PR1 – PR5: indicators of perceived reputation of insurance company; PP1 – PP2: indicators of perceived adequacy of premium of insurance services; PC1 – PC3: indicators of perceived adequacy of information about the coverage of insurance services;  $\zeta$  – exogenous variable;  $\eta$  – endogenous variables;  $\delta$  – errors for indicators of exogenous variables;  $\varepsilon$  – errors for indicators of endogenous variables;  $\zeta$  – errors in equations;  $\lambda$  – factors loading;  $\gamma$  – relationship between exogenous variable and endogenous variable;  $\beta$  – relationship between endogenous latent variables and corresponding subscripts; H1-H4: hypotheses.

Researchers in the field of health insurance have delineated key factors in user's decision-making process for supplementary voluntary insurance.

The importance of quality insurance coverage and supplementary voluntary insurance have been discussed separately (e.g. coverage of neurology, cardiology, orthopedics etc.). The findings have been that coverage is the most important factor in the decision to purchase supplementary voluntary insurance, in addition to the adequacy of premiums, company reputation, etc. (Šebjan and Bastič, 2013; Šebjan et al., 2013).

Šebjan (2013) explores the relationship between the premium and the quality of the supplementary voluntary insurance on the basis of the user's perception of relevance. Šebjan finds that the more important the premiums for voluntary health insurance (VHI) services are for users, the higher the perceived importance of additional VHI insurance coverage is. Based on the theoretical foundation presented here, we offer the fourth and final hypothesis:

*H4: The greater the adequacy of the premium for insurance service is in the perception of the consumer, the greater the perceived adequacy of information about the coverage of insurance services will be.*

Research hypotheses H1-H4 are shown below in Figure 1. Our conceptual model consists of four constructs and the connections among them. Each construct is explained in terms of certain indicators. The construct of perceived innovation (PI) is explained by means of three indicators, the construct of perceived reputation (PR) by five indicators, the construct of perceived adequacy of premium (PP) by two indicators, and the construct of perceived adequacy of information about coverage by three indicators. The model contains one exogenous variable (PI), while the other constructs represent endogenous variables.

## 3 Methodology

### 3.1 Survey instrument

The survey measurement instrument was developed in three phases. In the first step, the questionnaire used in this study was designed according to related literatures and users' and experts' opinions. In the second step, the questionnaire was pre-tested and revised to ensure content validity. The questionnaire was reviewed by ten employees in the management of one of the Slovenian insurance companies. In this way, the questionnaire was redefined and improved. In the third step, the questionnaire was tested on a sample of 5 users. The questionnaire was composed of two sections. The first section was intended to gain the insight of each respondent's basic personal data and usage of insurance services. The second section measured the respondent's perception of each construct in the research model.

The questionnaire examined perceived innovation of

insurance companies (3 items), perceived reputation of insurance companies (5 items), perceived adequacy of premium of insurance services (2 items) and perceived adequacy of information about the coverage of insurance services (3 items). Perceived innovation and reputation of insurance companies was measured using the modified questionnaire items of Wang and Ahmed (2004), Keh and Xie (2009), Helm (2011). To measure the perceived adequacy of premium of insurance services the Walsh et al. (2014), Chi and Kilduff (2011) scales were used. Since there are no scales developed for measuring perceived adequacy of information about the coverage of insurance services, the measurement scales were developed by the authors. The final questionnaire included 13 items. All items were assessed using a five-point Likert scales from 1 = "strongly disagree" to 5 = "strongly agree".

### 3.2 Data collection

Data was collected with an online questionnaire from 3 May 2010 to 31 May 2010. The target population represented random users who were legally able to buy insurance services in Slovenia, aged 18 years and older. All returned online questionnaires were correctly completed. For hypotheses testing data was collected based on a convenience non-random sample of 200 users of insurance services from Slovenia. In terms of demographics, 46 % were male (n = 92) and 54 % female (n = 108).

The largest group of respondents were from 36 and 45 years old (40%), followed by those who were from 26 to 35 years old (24%) and respondents who were from 46 to 55 years old (18%). The smallest group of respondents were from 66 years and older (2%). The respondents evaluated the insurance company with which they had most insurance contracts. The sample respondents were covered by Triglav Insurance Community Ltd. (34%), Adriatic Slovenica Insurance Company (22%), Generali Insurance Company (10%), Merkur Insurance Company (8%), Maribor Insurance (8%), Grawe Insurance (4%), Triglav Health Insurance (4%), Tilia Insurance (4%), Vzajemna Insurance (3%), KD Insurance (2%) and other insurance companies (1%).

### 3.3 Methods of analysis

Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) software were used to analyze the reliability and validity of the data and to conduct structural equation modeling (SEM). The analysis of the data set was based on exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Results within EFA were assessed based on the following rules: factor loadings of each item must exceed 0.5; and item-total correlation coefficients (CITC) for each item must exceed 0.5 to guarantee the reliability and validity of the questionnaire scale (Nunnally, 1978). EFA was also used to establish a scale

dimensionality by checking the factorial structure of items (indicators). The Bartlett's Test of Sphericity (BTS) and the Kaiser-Meyer-Olkin statistics (KMO) were calculated. The independence of the factors and simpler factor structure were obtained with the analysis of principal component analysis and the varimax method.

CFA was used to ascertain the efficiency of the measurement models, and SEM was used to test the conceptual framework and assumptions. To test the model, the following rules were applied. First, the goodness of fit index (GFI), normed fit index (NFI), comparative fit index (CFI) and Tucker-Lewis index (TLI) should exceed 0.9 (Jöreskog and Sörbom, 2002; Bentler, 1990; Schumacker and Lomax, 2004). Second, the root mean residual (RMR) and the root mean square error of approximation (RMSEA) should be less than 0.05 (Jöreskog and Sörbom, 2002; Bentler, 1990) or the limit value should be less than 0.08 (Byrne, 2001). Finally, the ratio of chi-square values to freedom degrees (2/df) should be less than 3.0 (Hoxmeier et al., 2000).

The scale reliability was assessed by item reliability measured by individual reliability coefficient (R<sup>2</sup>). Values of R<sup>2</sup> above 0.5 provide evidence of acceptable reliability (Bollen,

1989). Measure reliabilities were assessed by calculating Cronbach's alpha (Cronbach, 1951) and item total correlation analysis. The majority of measures employed in this study exhibited reliability scores over 0.7, which is above the acceptable level (Nunnally, 1978; de Vaus, 1995).

Scale validity was analyzed by focusing on convergent validity, discriminant validity and nomological validity. Convergent validity is the extent to which the individual items of a construct share variance between them and was assessed in two ways (Hair et al., 2010). It was tested by checking the values of composite reliability coefficients (CR) and average variance extracted (AVE). CR should be greater than 0.7, and AVE should be greater than 0.5 (Hair et al., 2010). Discriminant validity, which examines whether the constructs are uni-dimensional, was assessed by comparing the maximum shared variance (MSV) and average shared variance (ASV). Both should be less than the average variance extracted (AVE) to establish the discriminant validity (Hair et al., 2010). Nomological validity is established when the correlations between the construct in question and theoretically related constructs are significantly greater than zero (Campbell, 1960).

Table 1: Factors and items, factors loading, variance explained, item reliability, mean and standard deviation

Constructs	Items	Factors loading <sup>a</sup>	Variance explained	R <sup>2</sup> (item reliability)	Mean <sup>b</sup>	Standard deviation
Perceived reputation of insurance company	PR1 - It's a trustworthy insurance company.	0.741	57.497	0.550	3.84	0.930
	PR2 - I am familiar with the vision of insurance company.	0.748		0.559	3.46	1.053
	PR3 - Insurance company is an example to other insurers.	0.839		0.705	3.68	0.974
	PR4 - Management can be set as an example to other insurance companies.	0.870		0.756	3.56	1.034
	PR5 - Successful management of the insurance company.	0.820		0.673	3.72	0.905
Perceived innovation of insurance company	PI1 - Insurance company is represented with original ads.	0.835	11.704	0.696	3.74	0.914
	PI2 - The insurance company surprises me repeatedly with the innovations.	0.926		0.926	3.62	0.970
	PI3 - Insurance company is presented to the public through innovative PR campaigns.	0.901		0.812	3.56	0.943
Perceived adequacy of premium of insurance service	PP1 - The insurance coverage is clearly evident from the premium paid.	0.752	5.735	0.565	3.64	0.817
	PP2 - Premium of insurance service is justified by the service provided.	0.846		0.715	3.62	0.996
Perceived adequacy of information about the coverage	PC1 - The insurance coverage is clearly and exactly evident from the insurance policy.	0.774	4.561	0.599	3.75	0.933
	PC2 - The insurance company provides me with detailed information about the insurance coverage.	0.843		0.711	3.69	0.965
	PC3 - Insurance company has made available adequate coverage that meet my needs.	0.842		0.709	3.64	0.914

Remarks: (a) All factors loadings are significant at 0.001 level, (b) Measured on a five-point scale, ranging from 1 = strongly disagree to 5 = strongly agree.

## 4 Results

### 4.1 Validity and reliability analysis

In the first step, exploratory factor analysis (EFA) was employed. The CITC analyses were performed for the scale of 13 items. All cut-off values of 13 items were higher than 0.5. EFA showed that all four constructs were one-dimensional. The principle axing factoring extraction method was applied with varimax rotation (Anderson and Gebing, 1988). Following the recommendation of Hair et al. (2010), all items had standardized factor loadings higher than 0.5. The Kaiser-Meyer-Olkin (KMO) value was 0.908, which was more than the recommended value of 0.5 for sample adequacy. Bartlett's test of sphericity (BTS = 1546.299) was also significant ( $p < 0.001$ ). Factor loading greater than 0.5 were retained for further analysis. A four-factor solution (perceived innovation and perceived reputation of insurance company, perceived adequacy of premium and perceived adequacy of information about the coverage of insurance services) with 13 items was chosen.

In the next step, the scale's psychometric properties were evaluated using CFA. Four factors were created and used as latent variables. Convergent validity was assessed by examining the loadings and their statistical significance through t-values (Dunn et al., 1994). Item factor loadings were high, ranging from 0.579 to 0.790; all were significant at the 0.001 level. The R2 values were used to estimate the reliability of particular observed items.

An examination of their values reveals that all items did meet the 0.5 criterion. The items of the final scales with their loadings, item-total correlations, percentage of explained variance, item reliability, means, and standard deviations are presented in Table 1.

The "perceived reputation of insurance company" factor explained 57.5 % of total variance; "perceived innovation of insurance company" explained 11.7 %; "perceived adequacy of premium of insurance service" explained 5.7 %; and "perceived adequacy of information about the coverage of insurance service" explained 4.6 %. These four factors accounted for 79.5 % of the total variance.

Construct reliability means that a set of construct items is consistent in its measurement. For the constructs, the composite

Table 2: Convergent and discriminant validity of measurement models

Construct	Cronbach's $\alpha$	CR <sup>a</sup>	AVE <sup>b</sup>	MSV <sup>c</sup>	ASV <sup>d</sup>	Results of convergent validity CR > AVE AVE > 0.5	Results of discriminant validity MSV < AVE ASV < AVE
Perceived innovation of insurance company	0.926	0.928	0.811	0.669	0.428	yes	yes
Perceived reputation of insurance company	0.900	0.902	0.649	0.669	0.584	yes	partially
Perceived adequacy of premium of insurance service	0.768	0.780	0.640	0.753	0.521	yes	partially
Perceived adequacy of information about the coverage of insurance service	0.861	0.860	0.673	0.753	0.664	yes	partially

Remarks: (a) CR refers to the composite reliability ( $\rho_c = (\sum \lambda_i)^2 \text{var}(\xi) / [(\sum \lambda_i)^2 \text{var}(\xi) + \sum \theta_{ii}]$ ; (Bagozzi and Yi, 1988)), (b) AVE refers to the average variance extracted ( $\rho_c = (\sum \lambda_i^2 \text{var}(\xi)) / [(\sum \lambda_i^2 \text{var}(\xi)) + \sum \theta_{ii}]$ ; (Fornell and Larcker, 1981)), (c) MSV refers to the maximum shared variance, (d) ASV refers to the average shared variance.

reliability (CR) and the average variance extracted (AVE) were computed. Table 2 shows the construct reliability for all four constructs: perceived innovation of insurance company ( $\rho_{CR} = 0.928$ ,  $\rho_{AVE} = 0.811$ ); perceived reputation of insurance company ( $\rho_{CR} = 0.902$ ,  $\rho_{AVE} = 0.649$ ); perceived adequacy of premium of insurance service ( $\rho_{CR} = 0.780$ ,  $\rho_{AVE} = 0.640$ ); and perceived adequacy of information about the coverage of insurance service ( $\rho_{CR} = 0.860$ ,  $\rho_{AVE} = 0.673$ ).

The CR and AVE for all four constructs surpassed the threshold values of 0.7 and 0.5, respectively (Hair et al., 1998). The internal consistency of the items in relation to the single trait within the instrumental was tested using Cronbach's  $\alpha$ , ranging from 0.768 to 0.926. All values were above the generally agreed-upon lower limit of 0.7, indicating high internal consistency among the variables within each factor (Nunnally, 1978). The convergent validity of the measurement model was completely confirmed.

Following Fornell and Locker's (1981) approach for evaluating discriminant validity, the average variance extracted (AVE) and squared correlation for every possible pair of factors were compared. The discriminant validity of the measurement model was partially confirmed. One value of maximum shared variance (MSV) are less than AVE (perceived innovation of insurance company). All values of average shared variance (ASV) are less than AVE (see Table 2). The results indicate that the model partially supported discriminant validity ( $AVE > ASV$  and  $AVE > MSV$ ). The research shows that with the increase of MSV values AVE values decrease, which shows the tendency

Table 3: Summary statistics for one-factor and multi-factor models

One-factor model	Multi-factor model
1 factor	4 factors*
$\chi^2(65) = 413.168$	$\chi^2(59) = 104.459$
$\chi^2/df = 6.356$	$\chi^2/df = 1.770$
$p = 0.000$	$p = 0.000$
RMSEA = 0.185	RMSEA = 0.070
RMR = 0.081	RMR = 0.032
GFI = 0.658	GFI = 0.913
TLI = 0.725	TLI = 0.960
CFI = 0.771	CFI = 0.970
NFI = 0.742	NFI = 0.935
RFI = 0.690	RFI = 0.914
IFI = 0.773	IFI = 0.970

**Remarks:** \*Multifactorial model: perceived innovation of insurance company, perceived reputation of insurance company, perceived adequacy of premium and perceived adequacy of information about the coverage of insurance services.

of positive contribution to discriminative validity of the measuring model. The analysis has shown the connection between the values of MSV and the values of correlation as well as the relationship between the values of ASV and the values of total correlations and number of variables in construct. The interconstruct correlations are all positive and significant. The values are – as expected – relative to direction and size, and they make sense from a theoretical point of view. The results indicate that the model has complete nomological validity.

## 4.2 Competing model analysis

This study utilized three types of overall model fit measures: absolute, incremental and parsimonious. In a first step, the index of fit was evaluated for the one-factor model and the four-factor model. The results of the index of fit indicated, that the four-factor model was much more valid than the one-factor model (see Table 3).

In the second stage, the index of fit was evaluated for the one-factor and four-factor models of complete conceptual model. The one-factor model and four-factor models of the complete conceptual model were compared to evaluate the consistency of each of the models with the data. The four-factor model was developed with the CFA method. The results of the index of fit indicated that the four-factor model was much more valid than the one-factor model (see Table 3). The  $\chi^2(59) = 104.459$ ,  $p = 0.000$  of the measurement models was significant ( $p < 0.001$ ). The goodness-of-fit index (GFI) and the Normed Fit Index (NFI), which were equal to 0.913 and 0.935, were above the threshold value of 0.9. The Relative Fit Index (RFI) and the Incremental Fit Index (IFI) were assessed, with values of 0.914 and 0.970. Both indices were above the threshold value of 0.9.

The Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) were also assessed, with values of 0.970 and 0.960, respectively, both the recommended level of 0.9, indicating support for the proposed model. The Root Mean Square Error of Approximation (RMSEA), the Root Mean Square Residual (RMR) and the normed  $\chi^2$  were calculated to test parsimonious fit. The RMSEA and RMR values were 0.070 and 0.032, indicating a good model fit. Moreover, the normed  $\chi^2$  ( $\chi^2/df = 1.770$ ) fell between 1 and 2, further indicating a parsimonious fit. Hence, the suggested factorial structure fits properly.

## 4.3 Hypothesis testing

The conceptual model was examined with structural equation modeling. The overall fit measures of the full model in the SEM indicated that the fit of the model was acceptable. The indices of fit for the first development conceptual model were:  $\chi^2(61) = 105.978$  ( $p = 0.000$ ),  $GFI = 0.911$ ,  $CFI = 0.970$ ,  $TLI = 0.962$ ,  $RFI = 0.915$ ,  $IFI = 0.971$ ,  $NFI = 0.934$ ,  $RMR = 0.034$ ,  $RMSEA = 0.069$ ,  $\chi^2/df = 1.737$ . Then an improved final conceptual model was developed that allowed statistically significant correlation between errors for indicators of one construct: perceived adequacy of information about the coverage of insurance services (between PR4- Management can be set as an example to other insurance companies and PR5- Successful management of the insurance company; between PC1- The insurance coverage is clearly and exactly evident from the insurance policy and PC2- The insurance company provides me with detailed information about the insurance coverage.). The indices of fit for the improved final conceptual model were:  $\chi^2(59) = 84.033$  ( $p = 0.018$ ),  $GFI = 0.929$ ,  $CFI = 0.984$ ,  $TLI = 0.978$ ,

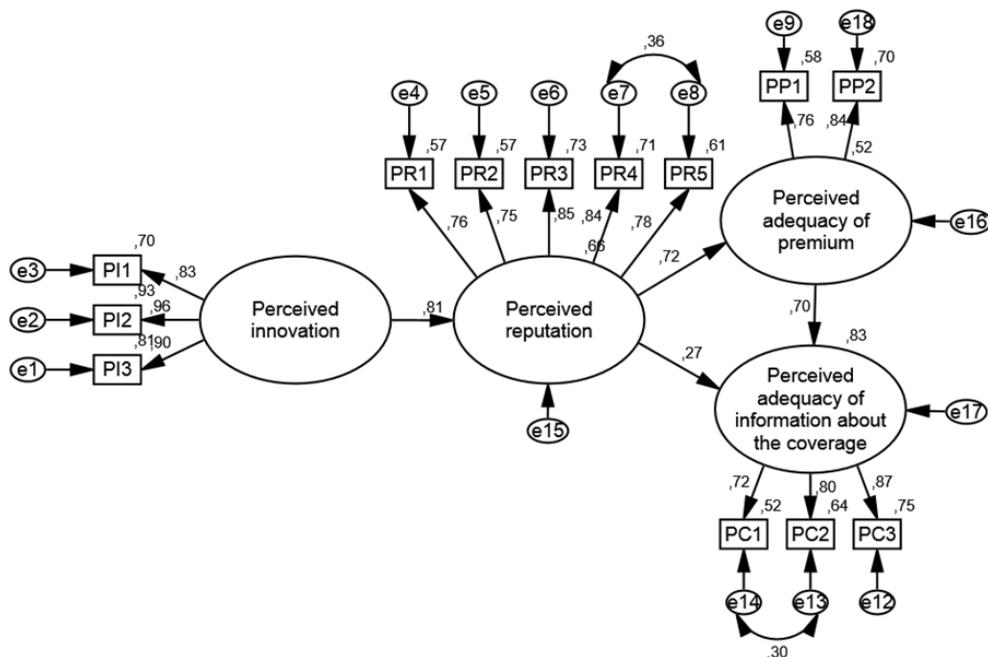


Figure 2: Standardized path estimates

Remarks: PI1 – PI3: indicators of perceived innovation of insurance company, PR1 – PR5: indicators of perceived reputation of insurance company, PP1 – PP2: indicators of perceived adequacy of premium of insurance services, PC1 – PC3: indicators of perceived adequacy of information about the coverage of insurance services; Global fit indices:  $\chi^2(59) = 84.033$  ( $p = 0.018$ ), GFI = 0.929, CFI = 0.984, TLI = 0.978, RFI = 0.931, IFI = 0.984, NFI = 0.947, RMR = 0.031, RMSEA = 0.052,  $\chi^2/df = 1.424$ .

RFI = 0.931, IFI = 0.984, NFI = 0.947, RMR = 0.031, RMSEA = 0.052,  $\chi^2/df = 1.424$ . The improved final conceptual model is presented in Figure 2.

As predicted by H1, perceived innovation of insurance company was a significant and positive predictor of reputation of insurance company ( $\gamma_1 = 0.813$ ;  $t = 9.700$ ;  $p < 0.001$ ). Perceived innovation of insurance company had positive and strong influence on perceived reputation of insurance company. Hypothesis H2 predicted that perceived reputation of insurance company was positively related to perceived adequacy of premium of insurance services. The results show that the perceived reputation of insurance company was indeed significantly positive, and strongly related to perceived adequacy of premium of insurance services ( $\beta_1 = 0.718$ ;  $t = 7.234$ ;  $p < 0.001$ ). The findings supported hypothesis H2. As hypothesis H3 predicted, perceived reputation of insurance company is significantly related to perceived adequacy of information about the coverage of insurance services. Perceived reputation of insurance company had positive and significant influence on perceived adequacy of information about the coverage of insurance services ( $\beta_2 = 0.273$ ;  $t = 2.511$ ;  $p < 0.010$ ).

The findings therefore supported hypothesis H3. The findings of the model testing also support H4 ( $\beta_3 = 0.696$ ;  $t = 5.493$ ;  $p < 0.001$ ) and therefore confirm that perceived adequacy of premium of insurance services have positive and significant influence on perceived adequacy of information about the coverage of insurance services. The highest

standardized path coefficient was observed between the perceived innovation and the perceived reputation of insurance company, between the perceived reputation of insurance company and the perceived insurance premium of insurance services, and finally, between the perceived insurance premium and the perceived insurance coverage of insurance services. Therefore, H1, H2, H3 and H4 are all supported in this study. Table 4 shows the results of the structural model in this study.

## 5 Discussion

The purpose of the study is to consider the quality of insurance services. We tested the effect of perceived innovation by the insurance company on its perceived reputation of, the impact of this perceived reputation on the perceived adequacy of information about the coverage of insurance services, and the impact of the perceived adequacy of the insurance premium on the perceived adequacy of information about the coverage of insurance service.

The aforementioned relations were then combined into a conceptual research model. In the course of our research, we have found that the relations between components of statistical significance suggest that components of the organization have a significant impact on the components of services provided by the market and users' perception of them. The results of the survey suggest that there is a strong positive

Table 4: Estimated effects within the causal model

Structural relationship	Standardized regression coefficient	Standard error	t-value	Significance	Results
H <sub>1</sub> : Perceived innovation of insurance company → perceived reputation of insurance company	$\gamma_1 = 0.813$	0.070	9.700	$p < 0.001$	H <sub>1</sub> is supported
H <sub>2</sub> : Perceived reputation of insurance company → perceived adequacy of premium of insurance service	$\beta_1 = 0.718$	0.087	7.234	$p < 0.001$	H <sub>2</sub> is supported
H <sub>3</sub> : Perceived reputation of insurance company → perceived adequacy of information about the coverage of insurance service	$\beta_2 = 0.273$	0.122	2.511	$p < 0.010$	H <sub>3</sub> is supported
H <sub>4</sub> : Perceived adequacy of premium of insurance service → perceived adequacy of information about the coverage of insurance service	$\beta_3 = 0.696$	0.163	5.493	$p < 0.001$	H <sub>4</sub> is supported

correlation between perceived innovations and the perceived reputation of the insurance company, which means that the more perceived innovation there is, the more likely it is that the insurance company will have a positive reputation. This finding is in line with the theoretical assumptions of researchers who deal with the relationship between innovation and organizational reputation (Vincente, 2009; Leforet, 2011; Simpson et al., 2006).

In the study we conclude that the components of the organization are reflected in the perception of service quality. The relationship between organizational components and services are significantly associated. With regard to the link between perceived reputation, adequacy of premium, and adequacy of information about coverage, the research shows a positive correlation. When the consumer's perception of retailer reputation turns more favorable, his perception of merchandise value and quality will be enhanced as well, and as a result, shoppers will exhibit higher intentions to increased demand to purchase merchandise in question.

A survey by Ou and Abratt (2006) indicates that the previous statement is not true, however. Other researchers have found that perceived quality has a significant impact on perceived reputation (Gatti et al., 2012). Despite these differing points of view, our study shows that there is a positive correlation between perceived reputation and perceived adequacy of information. We find that the better reputation an insurance company has, the higher the perceived adequacy of premiums will be. We also find that the better the reputation of the insurance company, the more favorable the perception of information about coverage is likely to be. However, the link between perceived reputation and perceived adequacy of premiums is stronger, compared with perceived adequacy of information about the coverage of insurance services.

Despite the abundance of research with regard to the im-

pact of prices on quality (Sweeney et al., 1999; Oh, 2003), we have found that if the insurance premium is detected as positive, this has significant impact on the perceived coverage. This attitude is reflected in the importance of both components for users, since Šebjan (2013) finds a significant impact on insurance premiums and additional insurance coverage.

Based on the results of our study, we conclude that the higher the perceived adequacy of premiums is, the higher the perceived adequacy of information about coverage will be. This indicates that within organizations that invest in innovation, the investments are reflected in the reputation of the organization, which in turn has an effect on the perception of service and service quality, as well as the adequacy of information about service components.

Based on our survey, insurance company managers will be able to better understand quality of service. Managers should have a comprehensive and systemic approach to their presence on the insurance market through the creation and promulgation of high-quality insurance services. It is not enough to focus on the service components exclusively; the components of the organization must also be addressed. By using an innovative approach in the form of new benefits for users, insurance companies can create a long-term positive reputation on the market, which may in turn be the basis for improved user perception of insurance premiums and insurance coverage.

## 6 Limitations and future research opportunities

The present study is limited to the insurance sector and insurance services offered by insurance companies on the Slovenian market. In developing and designing a conceptual

model we limited ourselves to four constructs, namely: perceived innovation, perceived reputation, adequacy of premiums, and perceived adequacy of information about service coverage. In the context of the conceptual model, we have analyzed the links among these constructs. The sample was limited to 200 users of insurance services. On the basis of these limitations, sample size could be increased to include users in other countries. In this way, conceptual models could be compared in order to explain any variations in the relationship among the constructs in question.

The conceptual model could be verified for the banking sector also, which increasingly includes insurance services in its assortment. The conceptual model could also be expanded to include demographic variables (age, gender, status etc.) or other variables, such as level of user loyalty to the organization. As the method of obtaining data plays an important role in research, two methods of inquiry might be employed: the personal questionnaire and the online questionnaire. Based on these two samples conceptual models could be compared according to the method of data collection. Other constructs might also be included in the conceptual model, such as perceived social responsibility.

## 7 Conclusion

Since users are highly responsive to economic changes in the insurance market, there is good reason to study the behavior of users of insurance services. In this paper we therefore present a conceptual model of some aspects of customer-perceived components of insurance service quality. The model consists of four components, namely perception of innovation, reputation, adequacy of premiums, and adequacy of information about coverage.

In this study we have tried to contribute to the clarification of the relationship between the components of the organization and the services in the insurance sector. The reputation of the insurance company has a significant impact on the user's perception of insurance premiums and insurance coverage, and both are important factors in choosing particular insurance services (Šebjan and Bastič, 2013). In this study we have also developed a measurement scale for perceived adequacy of coverage with three indicators, and we have dealt with the perceived adequacy of the premium for insurance services.

Another original contribution of this article is its highlighting of the relationship among perceived organizational reputation, perceived adequacy of premiums, and perceived adequacy of coverage. We have shown that insurers must constantly strive to build their reputation on the market because the reputation of the insurance company has a significant impact on the customer's perception of the adequacy of coverage and of the adequacy of the premium of insurance services. Quality is gained through innovation, which is the basis for competitiveness that is built on the company's strategies (Mulej, 2000).

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## Odnos med komponentami zavarovalniških družb in kakovostjo njihovih storitev

**Namen** – Povečevanje števila zavarovalnic in intenzivnost konkuriranja na trgu zahteva raziskovanje uporabnikovega zaznavanja komponent zavarovalnih storitev in zavarovalnic. Cilj študije je bil proučiti konceptualni model in odnose med uporabnikovim zaznavanjem inovativnosti zavarovalnice, ugleda zavarovalnice, ustreznosti informacij o zavarovalni premiji in ustreznosti zavarovalnega kritja zavarovalnih storitev.

**Metodologija** - Raziskovalni model je bil testiran s pomočjo modeliranja s strukturnimi enačbami, na osnovi vzorca 200 slovenskih uporabnikov zavarovalnih storitev.

**Rezultati** – Rezultati raziskave so pokazali, da višja kot je zaznana inovativnost zavarovalnice, višji je zaznani ugled zavarovalnice. Ugotovili smo tudi, da se višji zaznani ugled zavarovalnice odraža v višji zaznani ustreznosti informacij o zavarovalnem kritju in zavarovalni premiji zavarovalnih storitev. Študija je še pokazala, da višja kot je zaznana ustreznost informacije o zavarovalni premiji, višja je zaznana ustreznost informacij o zavarovalnem kritju zavarovalnih storitev.

**Sklepne ugotovitve** – Izvirnost znanstvenega prispevka se kaže v obravnavanju odnosa med zaznanim ugledom zavarovalnice, zaznana ustreznostjo informacij o zavarovalni premiji in zaznana ustreznostjo informacij o zavarovalnem kritju zavarovalnih storitev.

**Ključne besede:** zavarovalne storitve, inovativnost, ugled, zavarovalna premija, zavarovalno kritje

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# Quality Registers in Professional Health Care Educations; Knowledge Gaps and Proposed Actions

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**Background and purpose:** The use of quality registers has increased rapidly in Sweden and they are identified as beneficial for health care competitiveness. A quality register is a structured gathering of patient information, to improve health care. However, the introduction of quality registers in health care organisations presupposes that employees know how to use them in quality improvement. Disconnections, or knowledge gaps, concerning quality registers hamper the possibilities to take advantage of them. Taking departure in professional health care educations, the purpose with the paper is to identify and explore knowledge gaps concerning quality registers. A second purpose is to propose actions to bridge the gaps.

**Methodology/Approach:** In 2012 50 semi-structured telephone interviews were completed and the material analysed in the search for knowledge gaps.

**Results:** Five knowledge gaps were found. Some professional health care educations teach improvement knowledge, but they have difficulties integrating quality registers as a resource in teaching. Quality registers do not sufficiently cooperate with professional health care educations and county councils do not generally include learning of quality registers in clinical placements/practicums.

**Conclusion:** Professional health care educations need forums where they can collaborate with others to jointly explore how learning of quality registers can be integrated. There are promising approaches.

**Key words:** quality registers, quality improvement, health care

## 1 Introduction

*“... Health care will not realize its full potential unless change making becomes an intrinsic part of everyone’s job, every day, in all parts of the system”*

This is a powerful message by Batalden and Davidoff (2007, p. 2), that we all need to consider. As patient in health care systems we share the hope that the care we get is the best possible. Quality matters and it matters for us. Batalden and Davidoff (2007, p. 2) define quality improvement (QI) as “The combined and increasing efforts of everyone – health care professionals, patients and their families, researchers, payers, planners and educators – to make the changes that will lead to better patient outcomes (health), better system

performance (care) and better professional development (learning)”. This definition differs from many other definitions of QI in health care, mainly because it extends beyond solely identifying quality as an outcome (health, care and learning) - it also emphasises QI as a system. It points out that the system of QI in health care embraces actors on micro, meso and macro levels (Nelson, Batalden & Godfrey, 2007). On a micro level patients, families, caregivers and change facilitators are examples of actors, whereas leaders, payers, planners and organisational support systems are examples on a meso level. Policymakers and health care educators are actors mainly found at the macro level.

To realise the full potential of the system of QI in health care, the actors need to identify shared goals and

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cooperate to achieve them. To support this, they need knowledge, tools, methods and structures that bring them closer together and support their shared communication. In this paper, one such shared structure - quality registers - is in focus.

From a global perspective Sweden has taken the lead in the development and use of quality registers (Rosén, Sjöberg & Åström, 2010). The increase of new quality registers can be described as a revolution; in the year 1989 eight quality registers were nationally accepted, by the year 2003 the number had grown to 42, and by the year 2014, 81 had been accepted and another 24 registers had applied for national approval (Nulägesrapport 2014. Satsningen på kvalitetsregister, 2014). The Swedish government has, together with the Swedish Association of Local Authorities and Regions (SALAR), signed a five-year agreement (S2011/8471/FS) concerning shared responsibilities to develop, improve and implement quality registers.

The meta-message of this agreement is that quality registers are important and that they as a phenomenon are certain to stay in Swedish health care. However, the fact that quality registers is a part of the system of QI in health care presupposes that the actors in the system have knowledge about them, e.g. that health care organisations know how to use them in QI. Disconnections, or knowledge gaps concerning quality registers hampers the possibilities to take advantage of them.

A knowledge gap is in this paper defined as a gap between knowledge disciplines that needs to be bridged and the paper reports on a study on knowledge gaps concerning quality registers. The rationale for the study is that bridged knowledge gaps help actors in the system to take an increased advantage of quality registers, and hence, improve health care.

Health care educations train students to be future skilled employees, and therefore the paper takes departure in professional health care educations. The purpose is to identify and explore knowledge gaps concerning quality registers. The purpose is furthermore to propose actions to bridge these gaps.

The research questions are:

- Are there knowledge gaps concerning quality registers in professional health care educations?
- How can these knowledge gaps be bridged?

These questions have guided an empirical study including several actors in the Swedish system of QI in health care and the empirical material includes 50 interviews. In the next section the theoretical background for the paper is introduced and central concepts such as QI and quality registers are scrutinised. This is followed by a more thorough description of the method and design of the study. The results are compiled in section Results, and some of the results are transformed into an action plan for how knowledge gaps concerning quality registers can be bridged. This approach, using the findings to develop an action plan, indicates the influences of action research (Aagard Nielsen & Svensson, 2006) in this study.

## 1.2 Theoretical background

### 1.2.1 Quality registers

The American surgeon Ernest Codman (1869–1940) is claimed to be one of the early proponents of quality registers (Neuhauser, 2002). In his work as a surgeon he noticed that the end result, the long term outcomes for treated patients, varied considerably and he realised that health care professionals needed to learn more about diagnostic and treatment errors to improve care. Based on the ambition to improve health care quality Codman started to systematically record outcomes of treated patients (Baumgart and Neuhauser, 2009; Neuhauser, 2002). This “end-result message” which Codman strongly advocated was at the time perceived as provocative, but is today the principal idea behind quality registers.

In Sweden the concept of quality register is defined as an automated and structured gathering of information about persons, with the specific purpose of systematic and continuous development of quality of health care. They are intended for research and play an important role in this respect. In a period of five years (2009 - 2013) approx. 1000 scientific articles based on data from quality registers were published (Nulägesrapport 2014. Satsningen på kvalitetsregister, 2014). Furthermore, the law declares that quality registers should enable comparisons on a regional or national level (SFS 2008:355).

The concept of quality registers is broad and includes registers with differing purposes. Common categories are registers for diagnoses and procedures (Larsson, Lawyer, Garellick, Lindahl and Lundström, 2012). The collected data in quality registers have different characters; some provide background information, others outcome measures or process data. Regardless of the kind of register, data need to be collected and a few registers are based on automatic data transfers from digital patient records. However, the majority of quality registers require manual recording. In Codman’s time, the method of recording was the use of paper and pen, whereas computerised systems are the most common form today. Quality registers are based on the idea of systematic gathering of measures, with the purpose of improving the processes and treatments they cover. However, quality registers are databases, and an accumulation of measures alone is not an incentive for change. In terms of change, users at micro, meso and macro levels need knowledge of quality registers and how to use them in improvement efforts, that is, they need knowledge of QI.

Even though quality registers are important sources for research, and the numbers of articles based on quality registers increase there are only a few studies on how they are implemented or used by health care professionals. One recent study reports in how a quality register is introduced to a group of nurses (Rosengren, Höglund and Hedberg, 2012) and there are a few reports on how the use of quality registers increase adherence to national guidelines among health

care professionals (Carlhed, Bojestig, Wallentin, Lindström, Peterson, Åberg and Lindahl, 2006; Peterson, Carlhed, Lindahl, Lindström, Åberg, Andersson-Gäre and Bojestig, 2007).

### 1.2.2 Quality Improvement (QI)

QI is a body of knowledge, a method and a philosophy for improvement. It's historical roots originate from Japan, where predecessors as Deming and Juran were pioneers. The tools and methods were first used in the industrial sector, but later spread into the service sector and health care (Bergman and Klefsjö, 2012). The introduction of QI in health care is even called revolutionary (Bevan, Robert, Bate, Maher and Wells, 2007; Ferlie and Shortell, 2001).

QI is a diverse field and in health care several schools, tools and methods are employed, e.g. Lean (Kollberg, Dahlgård and Brehmer, 2007; Waring and Bishop, 2010), Continuous Quality Improvement (Counte and Meurer, 2001) and Six sigma (Pocha, 2010). However, the name of the schools, tools and methods does not determine the outcome, but that organisations have a holistic approach and are consistent in their values, methodologies and quality tools (Bergman and Klefsjö, 2012). A common fundamental aspect in all QI efforts is that they are expected to lead to improvements. To evaluate this data is necessary, which makes data collection fundamental in QI. Plentiful data enable for an in-depth analysis of the current quality problem and underpin the on-going evaluation of the progress of the quality effort (Bergman and Klefsjö, 2012). Quality registers with their wide spread, is a natural source for various types of clinical data in health care.

There is a growing imperative to teach QI in health care educations and the subject is, or is suggested to be, included in curricula for several professional health care educations (Kyrkjebø and Hanestad, 2003; Headrick, Barton, Ogrinc, Strang, Aboumatar, Aud, Haidet, Lindell, Madigosky and Patterson, 2012; Wong, Etchells, Kuper, Levinson and Shojania, 2010).

However, to our knowledge there are no reports on how quality registers are included in teaching in professional health care educations, or how they are integrated in teaching of QI, why this paper provides with new and important insights in this area.

## 2 Methods

This is a qualitative interview study (Kvale and Brinkmann, 2009) based on 50 interviews carried out in the period October 2012 - December 2012. The sampling strategy is a combination of a purposive sampling and snowball sampling (Saunders, Lewis and Thornhill, 2009) and the National Network for Improvement Knowledge (NNIK) played a central role in the work of identifying potential respondents for the study. NNIK is an inter professional network of organisations and universities in the Swedish health care sector that volun-

tarily collaborate to spread knowledge of QI among students (of all professions) and health care workers. The rationale for the collaboration is the conviction that theoretical and experiential aspects of QI are closely linked. Theories of QI need to be empirically tested and experienced by students in order to enhance their capacity to participate in QI project at their future work places, and it is valuable for employees in QI projects to anchor their experiences theoretically. NNIK is represented by universities that have integrated theories of QI in their curricula, and county councils and regions that actively support QI projects in their organisations. To promote approaches combining the use of quality registers and QI, NNIK in the year 2012 initiated a project that started with a study, which this paper reports on.

In a telephone conference, NNIK identified important actors in the system of QI in health care – eleven in total. These actors are briefly described in Table 1.

For each actor NNIK identified a number of potential respondents which received an invitation to participate in an interview. In the invitation the interview was described as a one-hour reflective discussion concerning QI and quality registers. If the invitation was accepted a telephone interview was conducted, whereas neglected or negatively answered invitations were left out. At the end of each interview the respondent was given the opportunity to suggest another potential respondent. The argument for this combined sampling strategy is that NNIK and the respondents together provide a rich overview of potential respondents for the study. Altogether, 50 interviews were carried out and in Table 1 the numbers in the third column show how many respondents from each actor that are included in the study. The primary data collection method was semi structured interviews (Yin, 2003). The interviews were designed to make gaps between the knowledge and resources the respondents had, and the knowledge and resources they would need in order to improve, visible. Therefore, the interview guide comprised open ended essay-questions to which the respondents responded by plentifully describing how they did, or wished to, support learning of QI and quality registers. To learn about the gaps the respondents also were asked to reflect over why the situation was at hand, how it could improve, and which collaborations that could be beneficial for improvement.

The interviews were not recorded. Instead rich hand notes were taken and to facilitate this a structured template inspired by SBAR was used. SBAR (Situation, Background, Assessment and Recommendation) is a standardised approach to communicate critical information.

Table 1. Actors in the system of quality improvement and numbers of interviews

Actors in the system	Organisations and respondents	No
1. Quality registers	Leaders and coordinators of quality registers; a combination of the largest quality registers and some smaller registers.	8
2. Quality register centres	Leaders and coordinators at centers with a national mission to support and develop quality registers.	4
3. Organisations	Leaders from a health care organisation; county councils, regions and municipalities.	7
4. Doctoral education programs	Principals or program managers for doctoral studies	2
5. Nursing programs	Program managers or similar for nursing programs	5
6. Occupational therapist programs	Program managers or similar for occupational therapist programs	2
7. Physiotherapist programs	Program manager or similar for physiotherapist program	1
8. Dietician programs	Program manager or similar for dietician program	1
9. Other education types, e.g. master's programs	Program managers or similar	3
10. Steering committee of the project	Leaders both from NNIK and other organisations	4
11. Preceptors of clinical practicums and student training in health care organisations.	Mainly preceptors of clinical practicums for doctors, nurses, occupational therapists and physiotherapists	13

It was originally intended for the airline industry and military, but has in recent decades been adopted in fields as health care (Hohenhaus, Powell and Hohenhaus, 2006). In this study the structure of SBAR supported swift and structured hand notes. During the on-going interview the interviewer noted what the respondents said under the corresponding headings Situation (the respondent's role and relations to QI and quality registers), Background (respondent's way of working with QI and quality registers hitherto), Assessment (analysis and comparisons of results and needs) and Recommendations (actions, connections and collaborations to bridge gaps). SBAR is a minimum information tool (Cunningham, Weiland, Dijk van, Paddle, Shilkofski and Cunningham, 2012), but in this study the headings supported the interviewer to take notes in a structured way, even if the interview alternated between various issues and the researcher came with follow up questions. Beyond the fact that SBAR offered the researcher a functional structure for swift documentation it also simplified for the respondents. The interview transcriptions followed the SBAR headings and all interviews were reviewed and confirmed by the respondents. The clear and familiar structure is presumed to have facilitated the time-limited review process for the respondents and when respondents noticed misunderstandings or imprecision the documentation was improved in the suggested way.

Conventional content analysis was used to analyse the data (Graneheim and Lundman, 2004). First data under the headings Assessment and Recommendation was analysed in the search for knowledge gaps. This analysis was based on the manifest content, that is, what the respondents ex-

PLICITLY discussed and mentioned as knowledge gaps in the interviews. These gaps were noted and sorted into groups. However, there were also indications of knowledge gaps under the headings Situation and Background. The cause for this is that the respondents had varying experiences and knowledge of QI and quality registers, and what one respondent could mention as a good idea worth trying (Recommendations) could by another respondent be confirmed as a working approach in their organisation under Background. The noted gaps were further compared and sorted and finally five knowledge gaps were identified.

The second research question of the paper, how the identified gaps can be bridged, is influenced by an action research approach (Aagard Nielsen and Svensson, 2006). Based on the identified knowledge gaps representatives from NNIK, the steering group for the project, the project management and some respondents from the study at meetings and telephone conferences analysed and discussed how the gaps could be bridged. Finally an action plan with four suggested actions was developed. The purpose with the action plan was to give guidance for the project initiated by NNIK. It points at improvement areas and the kind of actions that could bridge the gaps. However, due to the dynamic nature of the knowledge gaps and the actors in the system, the action plan is continuously developed.

The results of the study are presented in the next section. They are subdivided into two main categories: Knowledge gaps and Action plan to bridge knowledge gaps. For each category the findings are structured in bullet points.

## 3 Results

### 3.1 Knowledge gaps

*Knowledge gap 1. Teaching QI and quality registers in professional health care educations*

Several professional health care educations have included QI in their curricula, and a few exhibit nascent approaches to teach knowledge of quality registers. However, they seem to have limited capacity to describe the theoretical and methodological connections between QI and quality registers (see theoretical background of this paper).

*Knowledge gap 2. Teaching quality registers and applied statistics*

Many professional health care educations miss the opportunity to include quality registers as a resource in the teaching of applied statistics. Large cohorts of employees work with quality registers continuously and they are often challenged to analyse large data sets. Profound analysis requires knowledge of e.g. applied statistics and applied statistics is a generic knowledge included in most curricula of professional health care educations. However, data from quality registers are normally not used in the teaching of applied statistics. Therefore professional health care educations miss the opportunity to illuminate where knowledge of applied statistics is probable to be used in practice, and students miss the chance of an early acquaintance with quality registers.

*Knowledge gap 3. The notion of process in quality registers*

The notion of process leads to confusion. In health care a process is a well-established notion for how one patient moves through the health care system as the treatment proceeds and with this narrow understanding the need for quality registers is limited. However, in QI the concept of process concerns aggregated outcome data. Without clarifications on the different levels of processes (single patients and groups of patients) it seems difficult for professional health care educations to explain the need for quality registers and subsequently, their connections to QI.

*Knowledge gap 4. Cumulative knowledge production in health care*

Professional health care educations miss out the opportunity to explain how quality registers contribute to the cumulative knowledge production in health care. They do not explain that employees registering in quality registers contribute to a modern continuous knowledge production of health care.

*Knowledge gap 5. Learning about quality registers in clinical placements/practicums*

Learning of quality registers is relatively absent in the clinical placements/practicums. In Sweden all professional health care educations include periods of clinical place-

ments/practicums. The purpose is to offer students possibilities to learn and train important procedures and routines of their profession. However, even if quality registers nowadays are integrated in health care learning of quality registers is normally not integrated in clinical placements/practicums.

### 3.2 Action plan to bridge knowledge gaps

The action plan takes departure in the preceding knowledge gaps. The action plan is based on the belief that there is no single solution to all gaps. Instead the belief is that several smaller activities duplicated by many together construct the needed bridges. For this reason the improvement project aims to test small methodologies for how different actors can bridge the knowledge gaps.

*Action 1. Quality register data available in professional health care educations*

Quality registers need to develop accessible reports and IT-modules that can be used in the teaching of quality registers in professional health care educations. Thus, there is a need to develop more collaboration between quality registers and health care educations. In general, quality registers have not sufficiently identified health care educations as users of their registers and hence, health care educations have difficulties accessing quality register data.

*Action 2. Include learning of quality registers in teaching*

Professional health care educations need to develop methods to include learning of quality registers in the teaching. One ordinary method is to invite a representative from a quality register to present the register and to describe how the clinical outcomes are monitored. However, there are other methods as well. In a masters course e.g. students explored and examined an optional quality register in groups and presented and compared the quality registers at a final seminar. The course preceded courses in QI and individual essay writing which stimulated students to combine QI and quality registers in their essays. This kind of methods can be modified and adopted by other professional health care educations.

*Action 3. Methods to integrate learning of quality registers in clinical placements/practicums*

Professional health care educations and health care organisations need to develop methods to integrate learning of quality registers in clinical placements/practicums. Swedish professional health care educations include clinical placements/practicums and to organise and evaluate these practical learning moments representatives from educations and health care organisations have a long tradition of collaboration.

However, time is scarce and they have limited resources to jointly reflect over how quality registers can be integrated in the clinical placements/practicums. Thus, one simple method is to invite representatives from educations and health care organisations to telephone conferences where ideas and experiences can be presented, compared and evaluated.

#### *Action 4. Develop generic knowledge of quality registers*

There is a need to develop publications and study materials that describe how quality registers, QI and applied statistics are connected. However, in this study quality registers claimed to lack the capacity to develop these tools and professional health care educations claimed not to have the required knowledge. Health care workers on the other hand have practical experience from this, but they lack the means to transform this into generic knowledge. One step in the right direction is a recent national publication, *Ännu bättre vård (SALAR, 2013)*, that describes how applied statistics can be used to analyse complex aggregated outcome data for practitioners. Another step in the right direction is the current national action to write a basic study book about quality registers.

## 4 Discussion

Taking departure in professional health care educations, the purpose of the paper is to identify and explore knowledge gaps concerning quality registers, and the study has circled five gaps.

The first gap (Teaching QI and quality registers) concerns the fact that professional health care educations tend to have difficulties elucidating the relations between quality registers and QI. It is important to emphasise that promising approaches exist, but in general, there is a knowledge gap. The gap consists of missing links and explanations regarding how the knowledge disciplines are related and how they can be mutually advantageous.

This is even more apparent in the second knowledge gap (Teaching quality registers and applied statistics). Data collection is fundamental in QI and quality registers is a natural source for various types of clinical data but professional health care educations seem not sufficiently to highlight this. One explanation the respondents mention is that professional health care educations lack knowledge of quality registers and experience the access to register data as restricted.

The differing use of the notion process is in the third gap described as a barrier for the integration of quality register in professional health care educations. In health care a process is a well-established notion for the patient's flow through the system whereas a process in QI means aggregated outcome data. This kind of linguistic ambiguity can arise when a sector, in this case the health care sector, adopts expressions and concepts from another sector (the industrial sector). By circling the ambiguous meaning of process the study highlights consequences of adopting concepts from other sectors, whilst keeping the old perceptions intact.

The fourth knowledge gap (Cumulative knowledge production in health care) appears to be a promising way for professional health care educations to approach quality registers. Evidenced based medicine (EBM) is a well-established concept for knowledge production in health care and EBM requires research and practices to be based on extensive and high quality data. When health care workers register in quality registers they all participate in the data collection that will underpin this knowledge production. The collaborative and including aspects of quality registers were not mentioned by any respondents in the study, which indicates that they are overlooked.

The fifth gap (Learning about quality registers in clinical placements/practicums) points out that learning of quality registers normally is not integrated in clinical placements/practicums. It has also been highlighted that there is a need for professional health care educations and health care organisations to collaborate around this, however, the locus of collaboration concerns the cross-section macro level (professional health care educations), meso level (organisational support systems) and microlevel (clinical supervisors and students), which makes the collaboration complex. For this reason it is helpful if a third party takes the initiative to coordinate the collaboration.

There are only a few scientific reports on how quality registers are implemented or used by health care professionals (Carlhed et al., 2006; Peterson et al., 2007; Rosengren et al., 2012). Quality registers, with their rich data, has a natural connection to QI and there is a growing imperative to teach QI in health care educations (Headrick et al., 2012; Kyrkjebø and Hanestad, 2003; Wong et al., 2010). However, to our knowledge there are no scientific reports on how quality registers are included in professional health care educations, or how they are integrated in teaching of QI. Therefore the paper provides with important insights.

The paper identifies knowledge gaps that have significance for the integration of quality registers in teaching and it points out actions to bridge the gaps. A common denominator of the proposed actions is the need for actors in the system of QI in health care to collaborate on micro, meso and macro levels, which corresponds with the definition of QI by Batalden and Davidoff. They point out that QI is more than its outcome; it does also embrace everyone's connected and combined efforts (e.g collaborations), to improve the system (Batalden and Davidoff, 2007).

This study reveals that the efforts are not sufficiently connected and combined, which means that the system is fragile. To build a more robust system the arrangement of forums where actors can collaborate around quality registers and it's integration in professional health care educations is needed.

In this study the choice of method has been advantageous for reasons that were not apparent when it was chosen. Several respondents claimed never to have problematised the theoretical and practical connections between quality registers and QI and the interviews offered time to reflect over this. Many respondents did initially not recognise that they had approaches for quality registers; however, in the interviews they discovered this. Some respondents decided directly to develop their ideas further. For example, some professional health care educations included quality registers in the clinical placements/practicums, some health care organisations decided to invite students to internal quality conferences and some quality registers realised they needed to collaborate with professional health care educations. In this way the interviews sometimes functioned as an intervention. Another aspect of the method was that the interviewer, using the SBAR structure, systematically documented the ideas and actions developed in the interviews, and related to them in the forthcoming interviews. In this way the method supported a feed forward approach.

## 5 Conclusions

Taking departure in professional health care educations, this study has identified five knowledge gaps concerning quality registers. Professional health care educations tend to have difficulties elucidating the relations between quality registers, QI and applied statistics. The gap consists of missing explanations of how the knowledge disciplines are interrelated and dependent on each other. To bridge the gaps collaborations at micro, meso and macro levels are suggested. The action plan highlights the need for different forums where actors can connect and combine their efforts, which is in line with the definition of QI by Batalden and Davidoff (2007).

One limitation with the study is that no reminders were sent to the first set of proposed respondents. The rationale for this is that the study period was limited and that the identified and proposed respondents only were examples of specific actors. Instead of reminders, participating respondents were given the opportunity to suggest a potential respondent. With this combined sampling strategy the study in a short period of time included 50 respondents, representing all actors. Another limitation could at first glance be that only eight quality registers are included in the study. However, four register centres are also included. These centres have service contracts with approximately 30 quality registers, which means that they together represent large proportions of Sweden's quality registers.

This paper has implications for theory. To our knowledge there are no scientific reports on how quality registers are included in teaching in professional health care educations, or how they are integrated in teaching of QI. This paper provides with first insights in this area and it is important to study what different actors do to bridge the gaps, and how it works. One important aspect to study is how students' understandings and perceptions of their becoming work is

influenced by learnings of QI and quality registers.

However, the paper does also have implications for practice. Sweden has a leading position in the use and development of quality registers (Rosén et al., 2010) and the paper offers early insights for other countries with the same ambition. Professional health care educations need to take the knowledge gaps into account and to consider which actions that are beneficial for their students. They can also collaborate to organise forums, where actors from different parts of the system of QI in health care can connect and combine their efforts. In Sweden NNIK has applied for funding to support efforts of this character and there is an initiative to write a basic study book about quality registers, which in turn can be useful in teaching of quality registers.

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## Registri kvalitete pri izobraževanju zdravstvenih poklicev: vrzeli v znanju in predlagane akcije

**Ozadje in namen:** Uporaba registrov kvalitete na Švedskem je hitro narasla: registri veljajo za koristne pri izboljšanju konkurenčnosti zdravstva. Register kvalitete je strukturirana zbirka informacij o pacientih, katere namen je izboljšati zdravstveno varstvo. Uvajanje registrov kvalitete v organizacijah zdravstvenega varstva predpostavlja, da zaposleni vedo, kako jih uporabljati za izboljšanje kvalitete. Vrzeli v znanju v zvezi z registri kvalitete zmanjšujejo možnosti, da bi jih uporabili pri izboljšanju kvalitete. Poglavitni namen tega članka je ugotoviti in raziskati vrzeli v znanju v zvezi z registri kvalitete. Nadaljnji namen je predlagati akcije s katerimi bi lahko zapolnili te vrzeli.

**Metodologija/ pristop:** V letu 2012 smo izvedli 50 delno strukturiranih telefonskih intervjujev in analizirali zbrane podatke s ciljem identificirati vrzeli v znanju.

**Rezultati:** Ugotovili smo pet vrzeli v znanju. Nekatere zdravstvene izobraževalne institucije poučujejo izboljševanje znanja, a imajo težave z vključitvijo registrov kvalitete kot resurs pri poučevanju. Registri kvalitete pa ne sodelujejo dovolj z izobraževalnimi inštitucijami in občinski sveti v splošnem ne zahtevajo, da se registri kvalitete vključijo v klinične izobraževalne praktilume.

**Zaključek:** Zdravstvene izobraževalne ustanove rabijo forume kjer bi lahko sodelovale in skupaj z drugimi proučile kako bi lahko znanje o registrih kvalitete vključili v izobraževanje. Nekateri pristopi se kažejo obetajoči.

**Ključne besede:** registri kvalitete, izboljšanje kvalitete, zdravstvo

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# Users' Perceptions on Internet Financial Reporting

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**Background and Purpose:** The objective of this research was to explore the perceptions of the users regarding Internet financial reporting practices in Slovenia. With this research, we wanted to determine what the perceptions of the users are regarding the reliability, credibility, usefulness and sufficiency of online accounting information and how their expectations regarding the content of accounting information differ from the actual situation.

**Design/ Methodology/ Approach:** This research has two parts: in the first part, we summarised the actual situation regarding publishing of internet financial reporting on a sample of large companies in Slovenia (n=110) while, in the second part, we conducted a survey with which we assessed the expectations of users as regards of accounting information (n=127). We then compared users' expectations with the actual situation, analysed by evaluation of 110 websites of Slovene companies.

**Results:** In the research we found that 52.6% of companies publish their accounting information on their websites and that on average 40.2% of users actually make use of this information. We found that users have evaluated all four of characteristics: reliability, credibility, usefulness and sufficiency above average, whereby they evaluated usefulness with the highest grade and sufficiency with the lowest.

**Conclusion:** The results of this research can offer companies a feedback on users' expectations, particularly in cases where these expectations are greater than the actual situation. We have determined that users generally want information that indicates the financial status of a company (such as the Rating Report and data on the company's liquidity), as these information are currently expected by users but available information do not meet their need in full.

**Keywords:** Internet financial reporting, users' perceptions, IFR indicator, accounting information

## 1 Introduction

In this era of social, technological and market challenges, a company's systematic communication with its interest groups is considered essential and indispensable. The Internet presents one of such communication forms. Worldwide and domestically, a growing number of companies have their own website, as it enables numerous possibilities for presentations of companies. In addition to sales, services and marketing, companies' websites include even more information on their operation, inclusive of accounting and financial information that are usually presented within an Annual Report or as individual information intended for investors. For this type of reporting, the term Internet Financial Reporting (IFR) is used.

Users can find companies' Annual Reports and certain

accounting information on companies in various databases. These information are more unified, as mostly they summarise officially published information, required by national legislation; however, access to most of these online databases is payable, or they are comprised of only certain information and not complete Annual Reports. Thus, it is easier for the users to obtain accounting information on companies directly from their websites.

This type of reporting is also less expensive for companies, accessible to a wider circle of users and, in addition, companies can avail themselves of all the advantages of Internet technology when creating their presentations, for instance: Interactivity of presentation, currency, flexibility, use of multimedia presentations and the like. If we intend to make accounting information useful for the users these must also be true, impartial, timely, confidential and reliable.

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This is precisely the purpose of this article, in which we wish to determine what the perceptions of the users are regarding the reliability, credibility, usefulness and sufficiency of online accounting information and how their expectations regarding the content of accounting information differ from the actual situation.

## 2 Review of Theoretical background

The theoretical background of IFR may be explained using different theories, which are classified into two groups. The first includes modern economic theories (agency and signal theories, interest group theory, legitimacy theory, transaction costs theory and corporate governance theory), used to primarily interpret the the impact of different factors (company size, profitability, age, industrial sector, ownership concentration...) on IFR.

The second includes theories and models that apply either on the expectations of the users regarding the content of accounting information (interest groups theory), or to their acceptance of novelties, enabled by the world wide web at forwarding these information (the TAM model and innovation diffusion theory). Hereinafter, some of this theories will be presented briefly.

### 2.1 Agency theory

Agency theory is concerned with the problem of interest conflicts arising from the separation of ownership and control of a company. If managers do not act on behalf of their shareholders but try to further their own interests, this may lead to agency costs, such as the decline in the value of the company and monitoring costs to supervise the management (Marston and Polie, 2004). Watson et al. (2002) stated that managers have incentives to increase disclosure to convince shareholders that they are acting optimally because they know that shareholders seek to control their behaviour through bonding and monitoring activities.

### 2.2 Corporate governance theory

Corporate governance is defined as the relationship between various participants (the chief executive officer, management, shareholders and employees) in determining the direction and performance of firms (Monks and Minow, 1995; Al Motrafi, 2008). In Slovenia, large firms usually have the form of public limited companies and limited liability companies. Generally, the ownership of public limited companies is more dispersed than that of limited liability companies. Investors who own only a small percentage of shares in a company have limited access to information about the enterprise.

It can be assumed that these investors will use the Internet to gather company-specific information because data from other sources is more difficult to obtain (Marston in

Polie, 2004). Presenting their financial reporting on the Internet is perhaps a mechanism by which the company might disclose more information to reduce agency costs (Kelton, 2006).

Because of this, it was our objective to ascertain how the company's legal form and consequently the ownership structure impact the disclosure of financial information online. Based on agency theory and corporate governance theory the H4 in the research part of the paper was developed and tested by the t-test for two independent samples.

### 2.3 Interest group theory

The beginnings of this theory reach back to 1980, when Edward Freeman defined an interest group as »any group or individual who can affect or is affected by the achievement of the organization's objectives« (Freeman, 1984). Various groups of accounting information users, or interest groups, have various aims regarding the operations of a company and thus, also, various needs for information.

The type of information depends on the individual's approach to information, the nature of instrument they use, the nature and circumstances of the operations of a company and the individual's needs for information (Horvat, 2003). Of all interest groups, Internet financial reporting is intended mostly for a financial public that includes owners (shareholders), other investors (owners of bonds, lenders) and all other individuals who influence investment decisions (stockbrokers, analysts, regulators ...).

To this end, companies will usually create a »for investors« tab and publish information intended for the financial public in it. In accordance with this theory, we have established H2 in the research part of the paper paper. It was tested by the interval estimation of mean.

### 2.4 Technology Acceptance Model

The Technology Acceptance Model is the most frequently used model of information technology acceptance in literature (Sharp, 2007), with which we are able to explain how users accept information in information technology and implement them into their work. The model, which was developed by Davis (1989), predicts how and when users will accept or begin to use a new technology, whereby two factors are important. The first is the perceived usefulness – PU, which denotes a user's conviction that technology will improve their work or effectiveness; and the second is the perceived ease-of-use – PEOU, which measures the effort required for an efficient use of the new technology.

If we transfer the model onto Internet financial reporting we find that it provides several benefits to the users, for instance: Timeliness of information, access to information at any time and from any location, accessibility to a larger number of users, use of interactive and multimedia tools, low costs and transparency of information. One of the more interesting features of the Internet is that it allows companies

to provide information targeted at different stakeholders and to obtain feedback from them (Branco and Rodrigues, 2006). In research conducted by Ali Khan and Ismail (2012), users indicated easier acceptance of investment decisions and greater effectiveness at obtaining accounting information as its greatest advantages. Based on this model, we have established H1 in the research part of the paper. It was tested by analysing the confidence interval for proportion.

## 2.5 Innovation Diffusion Theory

The Innovation Diffusion Theory attempts to explain and describe the mechanism that will study the process from the acceptance of a certain invention up to its successful implementation in practice. Sevcik (2004) determined that it could take some time before an invention actually becomes an innovation, and that it happens many times that non-acceptance of novelties can present an obstacle for innovation diffusion. The theory was applied in numerous fields: Sociology, anthropology, marketing and informatics (Al Motrafi, 2008).

This theory deals largely with technological innovations, Internet financial reporting being one of them. Innovativeness in this field is manifest in terms of the content, as well as in terms of the form of reports. Every innovation also carries a certain degree of risk, which can be seen in lower trust in the information presented by companies on their websites, which presents one of the weaknesses of IFR. This theory was the basis for the formation of H3 in the research part of the paper. It was tested by the t-test for two independent samples.

## 3 Literature review

Research regarding Internet financial reporting proceeded from 1996, when the Internet was first used for advertising and commercial purposes (Allam and Lymer 2003). The first research into Internet financial reporting was conducted in 1996 by Petravick and Gillett using a sample of 150 companies from the USA classified among the Fortune 500 at the time (Petravick and Gillett, 1996). Later, such research was also undertaken in European countries, and recently in Arabic and Asian countries.

This research can be divided into three groups. The first group is research with which the authors wanted to determine the share of companies that publish their accounting information on their websites. Such researches were conducted by: Petravick and Gillett (1996), Booker and Galbreath (1997), Lymer (1997), Lymer and Tallberg (1997), Craven and Marston (1999), Debrecey and Gray (1999).

The second group is comprised of research that began mostly after 2000 and in which the authors determined factors that influence the level of IFR (for instance, the size, profitability, industrial sector, ownership, age of the company and other similar factors). For this purpose, a quantitative

measure was designed – the IFR indicator, as the aggregated value of individual assessment elements in terms of content and form. Previous research has shown:

- a positive correlation between company size and IFR: Craven and Marston, (1999), Pirchegger and Wagenhofer (1999), Ettredge et al. (2001), Debrecey et al. (2002), Laran and Liner, (2002), Allam and Lymer (2003), Oyeler et al. (2003), Xiao et al. (2004), Bollen et al., (2006), Al Shammari (2007), Damaso and Lourenco (2011), Dyczkowska (2014).
- a negative correlation between profitability and IFR: Xiao et al. (2004), Trabelsi et al. (2008), Momany and Pillai (2013) and Dyczkowska (2014), while the research performed by Pervan (2006), Al-Moghawli (2009), Homayoun and Rahman (2010) established a positive correlation between profitability and IFR.
- a positive correlation between ownership dispersion and the IFR: Abd-elsalam et al. (2007) and Al-Moghawli (2009), while Xiao et al. (2004) and Al Shammari (2007) failed to establish such a correlation.

The third group of research refers to the significance of accounting information disclosed on websites for various interest groups. In this case, the researchers were assessing the perceptions of accountants, auditors (Xiao et al., 2002) and managers in medium-sized companies (Gowthorpe, 2004; Smith and Pierce, 2005) through interviews and surveys. Therefore, we have formed a research question that reads as follows: Which accounting information do Slovenian companies publish on their websites and is this information harmonised with the users' perceptions?

In our research, we have combined both aspects as, in the first part of the research, we will summarise the actual situation regarding publishing of accounting information on a sample of large companies in Slovenia while, in the second part, we conducted a survey with which we assessed the expectations of users as regards these information.

## 4 Methods

The goal of the research was to determine how often the users make use of websites in order to obtain accounting information, what their perceptions are on this information and how their perceptions differ from the actual situation. To this end, we have formed four hypotheses:

- H1. When checking the credit standing of their business partners, more than half of the users in Slovenian companies have used accounting information disclosed on companies' websites at least once in the previous year. *This hypothesis was tested by the interval estimation of proportion.*
- H2. The users of accounting information in companies evaluate the accounting information disclosed on the websites of their business partners as reliable, credible, useful and sufficient. *This hypothesis was tested by the interval estimation of mean.*

- H3. There is no difference between the accounting information expected by the users and the actual accounting information disclosed on the companies' websites. *This hypothesis was tested by the t-test for two independent samples.*
- H4. The companies whose securities are quoted on a stock exchange (listed companies) disclose the accounting information on their websites more widely than the companies whose securities are not quoted on a stock exchange (private companies). *This hypothesis was tested by the t-test for two independent samples.*

#### 4.1 Evaluation of companies' websites

The first part of our research included the analysis of websites of large companies in Slovenia. As a criterion for largeness, we have considered two out of three fulfilled conditions according to the Companies' Act meaning that the number of employees equals or is greater than 250, total income equals or is greater than 35 million EUR and the value of total assets exceeds 17.5 million EUR. The overall population included 209 companies. We found that 26 companies (12.4%) do not have a website<sup>1</sup>, while 73 companies (34.4%) have a website, but do not disclose accounting information on it. The remaining companies, namely 110 (52.6%), disclose their accounting information on their websites. In the continuation, these companies represented our research sample.

The research took place in January 2012. In the assessment, we used an assessment form that was also used by other researchers (Pirchegger and Wagenhofer 1999; Marston and Polie, 2004; Pervan, 2006). In it, we included 50 elements of assessment, of which 32 were content related and 18 were form related. We used a dichotomic way of evaluation, in which we added to an element that was present on the website value 1, and otherwise, the value 0. The sum of all elements gave us the IFR indicator, which shows the degree of Internet financial reporting for an individual company. 4. 2 Conducting the survey among the users of Internet financial reporting.

The second part of the research, where we determined the perceptions and expectations of the users of Internet financial reporting, was performed with a survey. The survey questionnaire included 33 questions divided into three parts

according to the content: In the first part we inquired about respondents' demographical data (age, gender and field of employment), in the second part about the general information on the companies where the respondents work (size, line of business and legal organisation), and the third one was comprised of questions on respondents' perceptions as regards the content and form of online accounting information.

Beforehand, we conducted a pilot study in which we tested the survey questionnaire on a sample of 20 people. The purpose of this was mainly to test the comprehensiveness of the survey questions and to consider respondents' suggestions regarding the content of the survey. On the basis of feedback from the interviewees we have defined certain questions more clearly and also added some questions regarding the interviewees' point of views on the manner of accounting information presentation.

The population was comprised of the users of accounting information in companies, for instance Accountants, Financial Managers, investors, sales specialists. All companies from the online database Bizi.si represent the sampling frame of the research. Due to the large population we chose sampling, namely multi-phase sampling. The first phase was choosing the companies by statistical region in a proportional share according to the number of companies in the region.

In the second phase, we selected companies randomly with their e-mails published within each statistical region. We sent our questionnaires to 2,612 company addresses and received back 127 questionnaires, representing a response rate of less than 5%.

The issue of low response rate is one of the major problems of online surveys (Monroe and Adams, 2012). In order to obtain greater response we used three measures in our survey: Personalised invitation, non-financial reward in the form of forwarded research results and a suitable length of the survey questionnaire. The survey was carried out from 17th June 2013 to 6th August 2013.

Before describing sampling procedure explain what was your sampling frame (describe the source of the list of all companies which was used in sampling procedure).

1 In most cases these are the subsidiaries of foreign companies, which have been founded by foreign legal persons and are in majority foreign ownership.

2 In companies where the e-mail addresses of employees were posted on the website, the survey was sent directly to the addressees (such as Accountants, Financial Managers and sales specialists). Where such procedure was not possible due to the fact that the company had only a general e-mail address posted, we provided a covering letter in which we explained that the survey should be sent to the employees in the accounting, financial and sales sector.

3 We achieved personalisation by addressing a surveyed user personally, which indicates respect towards the surveyed user and creates the feeling of importance (Dillman, 2000). Non-financial reward was in the form of forwarded research results to those surveyed users who explicitly expressed this wish, and for the length of survey questionnaire, we took into account that it should not take more than 15 minutes.

## 5 Results

### 5.1 Descriptive statistics of the analysis of websites of large companies

The sample included 110 companies. In view of their legal form, 93 (84.5%) companies were public limited companies, and 17 (15.5%) were private limited liability companies. 24 of these public limited companies are quoted at the Ljubljana Public Stock Exchange, namely 8 in the first quotation, 10 in the standard quotation and 6 in the entry quotation. The average age of the studied companies was 64 years (SD=51), and the average number of employees was 939 (SD=1.617). The Table 1 shows the structure of companies according to the sector wherein we have used the European Classification of Industries (NACE Rev. 2).

Regarding the content of accounting information, we evaluated 32 different elements and formed these into the IFR indicator – content. The descriptive statistics of the indicator are evident from Table 2. The average value of the indicator is 18.13 (SD=5.69), the lowest 5, and the highest 31, which means the range is 26. The most common value of

the indicator is 17, as is the median value. The coefficient of variation is 31.4%. The distribution is slightly asymmetrical (coefficient of skewness = 0.205) and slightly flattened (coefficient of kurtosis = - 0.240).

As regards the content, we have determined that almost all of the companies have their Annual Report published on their website, usually in PDF format, while some companies also have an interactive version. 29.1% of the companies considered also publish interim reports (semi-Annual or Quarterly Reports) in addition to the Annual Statements. 62.7% of the companies considered also publish their Annual Statement in a foreign language, most often in the English language. All financial statements are also well presented, as are their explanations, accounting policies and Auditor's Report – these data are published by more than 90.0% of companies. The following areas are presented somewhat less efficiently: Operational review, accounting ratios and their explanations, sustainable development, financing activities and investments, and corporative governance. Only 25.5% of companies report on its financial situation (such as liquidity, maturity of loans, publication of rating reports, etc.).

Table 1: The structure of companies according to the sector

Sector	N	%
B - mining and quarrying	1	0.9
C - manufacturing	32	29.1
D - electricity, gas, steam and air conditioning supply	12	10.9
E - water supply; sewerage, waste management and remediation activities	1	0.9
F - construction	8	7.3
G - wholesale and retail trade; repair of motor vehicles and motorcycles	11	10.0
H - transportation and storage	9	8.2
I - accommodation and food service activities	3	2.7
J - information and communication	2	1.8
K - financial and insurance activities	28	25.5
Q - human health and social work activities	1	0.9
R - arts, entertainment and recreation	2	1.8
<b>Total</b>	<b>110</b>	<b>100,00</b>

Table 2: Descriptive statistics of indicator IFR-content

	N	Minimum	Maximum	Mean	Std. Deviation
IFR-content	110	5,00	31,00	18,1364	5,69641

In addition to the above listed accounting information that is usually presented within the Annual Report itself, just over half of the companies also present independent accounting information on their websites, usually within the tab »For investors«. Most often, these are data on shareholders assemblies, public announcements for investors, data on shares and dividends, ownership structure and financial calendar.

## 5.2 Descriptive statistics of the users of online information

Regarding the gender of our surveyed users, we included 83 women (65.4%) and 44 men (34.7%). The youngest surveyed user was 26 years old and the oldest was 63 years old; the average age was 42.65 years (SD=8.57 years). The remaining characteristics of the sample are shown in the Table 3.

## 5.3 Hypotheses testing

### 5.3.1 Testing the H1

In our research we determined that 5 (3.9%) of our surveyed users do not obtain accounting information on their business partners. The remaining 122 surveyed users obtain this information from one or more sources: The most common source is AJPES (the Agency of the Republic of Slovenia for Public Legal Records and Services), where 89 (70.1%) of surveyed users obtain information, followed by companies' websites used by 47 (37.0%) surveyed users. These were followed by credit rating organisations that provided accounting information to 19 (15.0%) surveyed users, while 20 (15.7%) surveyed users used other means of obtaining information. These data are shown in Figure 1.

In the continuation of the research, we focused on the companies that used companies' websites among their sources of

information. When asked whether their company has used websites to obtain accounting information in the previous year, 51 (40.2%) of surveyed users replied that they had used websites and 76 (59.2%) of surveyed users replied that they had not.

To test the hypotheses, we calculated the confidence interval for proportion. Based on the point estimate of proportion and the standard error of estimate, we have calculated the confidence interval:

$$P(40,16 - 1,96 * 4,35 < \pi < 40,16 + 1,96 * 4,35) = 0,95$$

$$P(31,63 < \pi < 48,68) = 0,95$$

We thus conclude with 95% confidence that the share of users who make use of online accounting information is between 31.6% and 48.7%. This means that we cannot confirm the hypothesis H1, which states that at least half (at least 50.0%) of users make use of online accounting information.

### 5.3.2 Testing the H2

Our second hypothesis was used to test users agreeing with the statement that accounting information disclosed on websites is reliable, credible, useful and sufficient. The users expressed their agreement on a 5-point Likert type scale, where value 1 represents the answer »I strongly disagree«, and value 5 represents the answer »I strongly agree«. In all four cases the surveyed users evaluated all the characteristics with an above-average grade, as means were higher than 3.50 in all cases. On average, the surveyed users evaluated the usefulness of accounting information with the highest grade (M=4.17, SD=0.062), followed by reliability (M=3.78, SD=0.069), credibility (M=3.75, SD=0.074), and finally sufficiency (SD=3.54, MD=0.079). The results are shown in Table 4.

Table 3: Descriptive statistics of the sample of users

Variable	Description	N	%
Size of their company	Small	82	64.6
	Medium	23	18.1
	Large	22	17.3
Legal form of their company	Private limited liability company	89	70.1
	Public liability company	27	21.3
	Sole trader	5	3.9
	Others	6	4.7
Field of employment	Accounting	63	49.6
	Finance	26	20.5
	Sales	20	15.8
	Other fields	18	14.2

In order to test our hypothesis, we calculated the confidence interval for mean. The calculations are shown in Table 5.

We thus conclude with 95% confidence that the average evaluation of reliability of accounting information is between 3.65 and 3.92, the average evaluation of credibility of accounting information is between 3.60 and 3.90, the average evaluation of usefulness of accounting information is between 4.04 and 4.29, and the average evaluation of sufficiency of accounting information is between 3.39 and 3.69. As all three interval estimations of means are within the interval that is larger than 3.50 (except the last one – accounting information is sufficient) we can partially confirm the hypothesis H2. With a 95% probability we estimate that users evaluate accounting information disclosed on websites as reliable, credible and useful.

We also wanted to determine whether there exist differences in the point of views between the Accountants and Financial Managers on one side and the sales specialists and other profiles on the other side. The results of the t-test have shown that there are no statistically significant differences in the user's point of views in neither of the statements.

### 5.3.3 Testing the H3

With our third hypothesis we checked the differences between the accounting information expected by the users and the actual accounting information disclosed on the companies' websites. We tested the hypothesis with a t-test for two independent samples. With the t-test we wanted to check whether the difference in means between the expected and actual accounting information is statistically significant. We obtained the expected information by conducting a survey with a survey questionnaire containing a 4-point Likert type scale, in which value 1 represents the answer »I strongly disagree«, and value 4 represents the answer »I strongly agree«. We decided to use the evaluation scale with an even number of answers in order to avoid getting neutral answers. We obtained the actual information from the evaluation of websites (n=110), presented in chapter 4.1. For comparison purposes we coded values 3 and 4 from the survey questionnaire into value 1, and we coded values 2 and 1 from the survey questionnaire into value 0, in order to obtain the same evaluation scale as was used for expected values. The descriptive statistics of both samples are shown in Table 6.

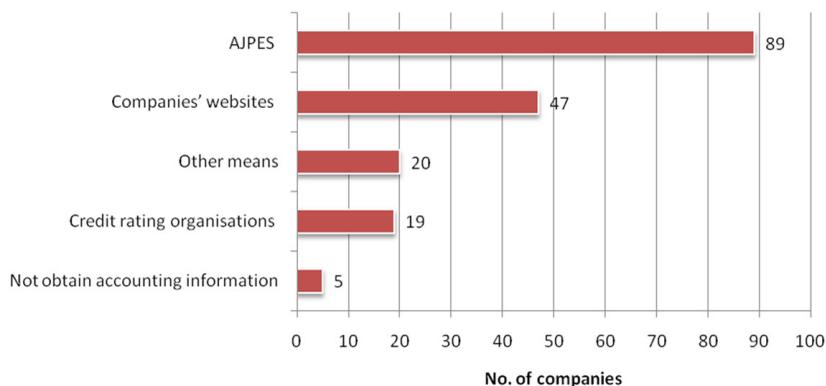


Figure 1: Sources of accounting information

Table 4: Descriptive statistics of the surveyed users' perceptions on the characteristics of accounting information

	N	Mean		SD
		M	Standard error ( <i>se</i> )	
Accounting information is reliable.	127	3.78	0.069	0.776
Accounting information is credible.	127	3.75	0.074	0.835
Accounting information is useful.	127	4.17	0.062	0.703
Accounting information is sufficient.	127	3.54	0.079	0.889

Table 5: Descriptive statistics of the surveyed users' perceptions on the characteristics of accounting information

Statement	Interval estimation
Accounting information is reliable.	$P(3,65 < \bar{y} < 3,92 = 0,95$
Accounting information is credible.	$P(3,60 < \bar{y} < 3,90 = 0,95$
Accounting information is useful.	$P(4,04 < \bar{y} < 4,29 = 0,95$
Accounting information is sufficient.	$P(3,39 < \bar{y} < 3,69 = 0,95$

Table 6: Descriptive statistics of expected and actual accounting information

	Group	N	Mean	SD	Std. Error Mean
Annual Report	expected	127	0.88	0.32	0.03
	actual	110	0.98	0.09	0.01
Balance Sheet	expected	127	0.84	0.37	0.03
	actual	110	0.99	0.10	0.01
Profit and Loss Account	expected	127	0.87	0.34	0.03
	actual	110	0.99	0.10	0.01
Accounting explanations and policies	expected	127	0.76	0.43	0.04
	actual	110	0.89	0.30	0.03
Auditor's Report	expected	127	0.80	0.40	0.04
	actual	110	0.95	0.23	0.02
Annual Reports in a foreign language	expected	127	0.49	0.50	0.04
	actual	110	0.63	0.49	0.05
Interim Reports	expected	127	0.74	0.44	0.04
	actual	110	0.29	0.46	0.04
Accounting ratios with explanations	expected	127	0.81	0.39	0.03
	actual	110	0.47	0.36	0.03
Reports on Financial Management	expected	127	0.87	0.33	0.03
	actual	110	0.25	0.44	0.04
Reports on Risks	expected	127	0.82	0.39	0.03
	actual	110	0.81	0.39	0.04
Reports on Sustainable Development	expected	127	0.69	0.46	0.04
	actual	110	0.66	0.47	0.05
Reports on Corporative Governance	expected	127	0.65	0.48	0.04
	actual	110	0.44	0.50	0.05
Trends in shares and dividends	expected	127	0.67	0.47	0.04
	actual	110	0.19	0.35	0.03
Cash Flow Statement	expected	127	0.80	0.41	0.04
	actual	110	0.95	0.21	0.02
Annual Report for previous years	expected	127	0.84	0.37	0.03
	actual	110	0.60	0.49	0.05

The means for the actual and expected accounting information are shown in Figure 2. The left side shows the information where users' expectations were greater than the actual situation, and the right side shows the information where the actual information was greater than users' expectations.

Firstly, we used a Levene's test to assess the equality of variances and conducted a t-test for two independent samples. We used this test to compare the two proportions. Namely, when encoding, we used binary variables (0,1) by which their averaged value is equal to a percentage (Gonzales 2009). The first proportion presents the expected accounting information while the second presents the actual accounting information. We wanted to determine whether the difference between two proportions is statistically significant or just a sampling error.

The results of the t-test from Table 7 prove that a statistically significant difference between the expected and actual accounting information on websites is present in the following thirteen pieces of information: In the publication of a Balance Sheet ( $t=-4.135, p=0.000$ ), in the publication of a Cash Flow Statement ( $t=-3.716, p=0.000$ ), in the publication of a Profit and Loss Account ( $t=-3.704, p=0.000$ ), in an Au-

ditor's Report ( $t=-3.300, p=0.001$ ), in accounting explanations and policies ( $t=-2.620, p=0.009$ ), in the publication of an Annual Report ( $t=-2.510, p=0.013$ ), in an Annual Report in a foreign language ( $t=-2.160, p=0.032$ ), in reports on financial management ( $t=12.349, p=0.000$ ), in trends in shares and dividends ( $t=8.729, p=0.000$ ), in the publication of interim reports ( $p=7.683, p=0.000$ ), in accounting ratios with explanations ( $t=7.005, p=0.000$ ), in the Annual Report for previous years ( $t=4.340, p=0.000$ ), and in Reports on Corporate Governance ( $t=3.422, p=0.001$ ). With the last six pieces of information, the users' expectations are higher than the actual situation regarding the reports. With the first seven pieces of information the situation is just the opposite: The actual accounting information on websites are presented better than expected by the users.

A statistically insignificant difference at 5% significance level was only present with two pieces of accounting information: In reports on risks ( $t=0.193, p=0.847$ ) and in reports on sustainable development ( $t=0.479, p=0.632$ ). In these two cases the users' expectations do not differ significantly from the actual information disclosed on websites.

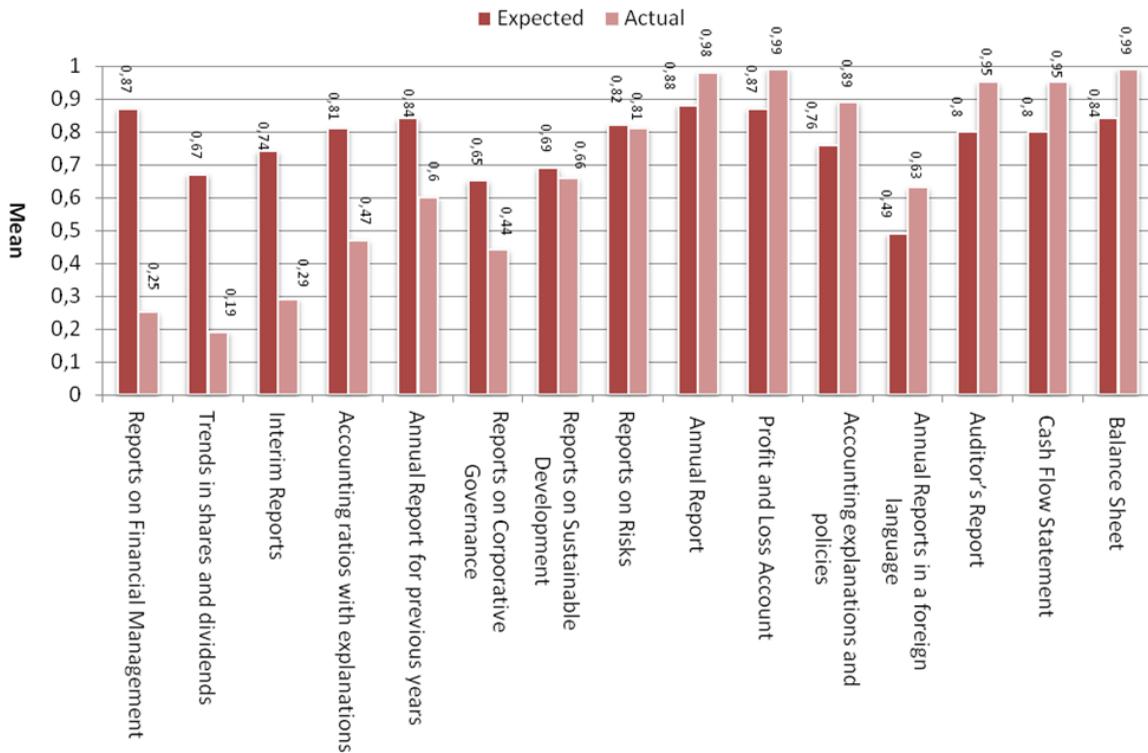


Figure 2: The mean of expected and actual accounting information

Table 7: T-test to determine the differences between the means

	t-test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Annual Report	-2,510	235	,013	-,08629	,03437	-,15401	-,01857
Balance Sheet	-4.135	235	.000	-.14839	.03589	-.21909	-.07769
Profit and Loss Account	-3.704	235	.000	-.12477	.03368	-.19113	-.05841
Accounting explanations and policies	-2.620	235	.009	-.12713	.04852	-.22271	-.03155
Publication of Auditor's Report	-3.300	235	.001	-.14230	.04312	-.22725	-.05736
Annual Reports in a foreign language	-2.160	235	.032	-.13908	.06440	-.26596	-.01221
Interim Reports	7.683	227.6	.000	.44925	.05847	.33403	.56446
Accounting ratios with explanations	7.005	234.2	.000	.34284	.04894	.24641	.43927
Reports on Financial Management	12.349	235	.000	.61947	.05016	.52064	.71830
Reports on Risks	.193	228.7	.847	.00981	.05093	-.09055	.11016
Reports on Sustainable Development	.479	228.4	.632	.02928	.06113	-.09117	.14972
Reports on Corporative Governance	3.422	235	.001	.21718	.06347	.09213	.34223
Trends in shares and dividends	8.729	235	.000	.47838	.05480	.37042	.58635
Cash Flow Statement	-3.716	235	.000	-.15927	.04286	-.24372	-.07482
Annual Report for previous years	4.340	235	.000	.24252	.05588	.13243	.35260

The hypothesis can be confirmed, partially, with a 95% probability, meaning that there is no statistically significant difference between the expected accounting information expected by users and the actual accounting information disclosed on companies' websites in the case of reporting on financial risk and sustainable development. With all other information, we notice a statistically significant difference manifested on the one hand with a positive and on the other hand with a negative deviation in the actual and expected accounting information. These deviations are presented graphically in Figure 2.

We also wanted to determine whether there exist differences in the expectations regarding the importance of the individual accounting information between Accountants and Financial Managers on one side and the sales specialists and other profiles on the other side. By performing a t-test for two independent samples we have determined that the statistically significant differences show themselves in the accounting explanations and policies ( $t=2.882$ ,  $p=0.026$ ), in the publication of the Auditor's Report ( $t=2.098$ ,  $p=0.040$ ) and in the publication of accounting ratios ( $t=2.472$ ,  $p=0.015$ ). In all three cases, the Accountants and Financial Managers have evaluated these contents higher than the sales specialists and other employee profiles.

### 5.3.4 Testing the H4

The theoretical bases for the testing of this hypothesis have been presented in the agency theory and the corporative governance theory. In accordance with these two theories it is

considered that stricter provisions regarding the publicity of publication of information on the operation of companies whose securities are quoted on the stock exchange (listed companies) are applicable. Therefore, a higher IFR indicator (a form as by the companies whose securities are not quoted on the stock exchange – private companies) can be expected for these companies. The hypothesis has been tested with a t-test for two independent samples. It has been determined that there exist a statistically significant difference between both groups of companies ( $t=-6.442$ ,  $p=0.000$ ). The table 8 shows that the average value of the IFR indicator for the »listed companies« is 23.79 (SD=5.49) and 16.56 (SD=4.68) for the »private companies«.

Table 8: Descriptive statistics of indicator IFR-content for listed companies and other companies

	N	Mean	SD	Std. Error Mean
Listed companies	69	17,08	4,739	,570
Private companies	24	23,79	5,492	1,121

## 6 Discussion

The results of the research show that the Internet financial reporting is important both in the light of the companies that publish information, as well as the users who use the information. Out of a total of 209 large companies included in the research, 110 of them (52.6%) publish their accounting information on their websites. The research has also confirmed that the users use the so published accounting information frequently and that they consider them to be useful, sufficient, credible and real.

The results of this research can offer companies a feedback on users' expectations, particularly in cases where these expectations are greater than the actual situation, meaning that the users expect more or different information than those offered by companies on their websites. This is particularly evident in the Reports on financial management. In the future, companies could improve these Reports in a manner that would enable a more transparent publication of financial status information, amounts and maturity of loans, financial stability and liquidity, and could also disclose rating reports. Due to the uncertainty of investors resulting from numerous collapses of companies, particular attention must be paid to the information that indicates the financial status of a company. Users might also expect more information on trends in shares and dividends. Companies can provide this information by creating interactive websites with a link to the Ljubljana Stock Exchange and, in this manner, enable daily updating of this information. Users also want more frequent publications of Annual Reports, not merely once a year, and companies could make good use of this by publishing interim Reports. Companies could pay more attention to the presentation of financial ratios and their explanations, which are particularly important for users who are not experts in the field of accounting. Users would also like to have access to the archive of Annual Reports.

Other accounting information, such as publication of the Annual Report, Auditor's Report, accounting statements and their explanations and policies and publication of an Annual Report in a foreign language exceed users' expectations. Companies should continue to publish this information to the extent they were published so far, and update them in terms of content and form consistent with the possibilities and opportunities offered by the accounting profession on one hand and world wide web on the other.

## 7 Conclusion

The fast development of online technologies has an important effect on accounting reports as a growing number of companies publish various accounting and non-accounting information on their websites, intended mostly for their investors, but also for other users. Internet financial reporting provides numerous advantages for companies and for the users, demonstrated in their wide accessibility, low costs, regular updating of information, various forms of presentation and numerous other advantages offered by the world wide web. Consequently, these types of reports are becoming in-

creasingly more important. We have determined this result with our research conducted among companies and among users. In the research we found that 52.6% of companies publish their accounting information on their websites and that on average 40.2% of users actually make use of this information. In order of significance this represents the second place, as users give priority to the information published by AJPES (the Agency of the Republic of Slovenia for Public Legal Records and Services), comprised of officially published information as required by national legislation.

In the continuation of the research, we focused mainly on the perceptions of the users of online accounting information regarding their reliability, credibility, usefulness and sufficiency. The results show that the respondents evaluated the usefulness of accounting information with the highest grade, followed by reliability, credibility and, finally, sufficiency. In order to shed more light on the sufficiency component, we also looked at users' perceptions regarding the individual contents of accounting information. We found out that users mostly want contents that help them assess the financial status of a company: for instance, Annual Report, Profit and Loss Account, Balance Sheet, rating reports, and reports on financial management. As less important, they evaluated Reports on Sustainable Development, Reports on Corporate Governance, accounting information in a foreign language and information on trends in shares and dividends.

Considering that we have also evaluated companies' websites, where accounting information is published, we wanted to determine to what extent the users' expectations are consistent with the actual information published on websites. We have found the greatest discrepancy between the expected and provided information in the reports on financial management, trends in shares and dividends, interim reports and presentation of financial ratios and their explanations. These are the areas in which companies could improve their reports in the future.

In the future, Internet financial reporting will continue to present numerous opportunities and challenges for companies as regards the contents and the manner of its presentation, as well. Considering there are currently no rules or standards on Internet reports, it is recommended that companies disclose true, reliable, impartial and useful information on their websites. In this manner, they will be able to satisfy the interests of various users and build greater trust in Internet financial reporting.

As this research represents only a narrow segment of the field of the Internet financial reporting, there are a number of opportunities for a more thorough analysis of this field in the further researches. The users' sample refers only to the users in companies (incorporated users) and has not been expanded to other groups of users. The possibility for further researches presents also the comparison of users' point of views of various groups: Revisers, Analysts, Bankers, investment funds and likewise.

The main constraint of this research can be seen in the fact that we assessed the users' views on the Internet financial reporting content, but not their views regarding the form or method of their presentation. These views could also

include the possibility of transfer, copying, printing and virtual browsing through the Annual Reports, their presentation on mobile applications (smart phones and tablet PCs), multimedia methods of presentation, graphical displays and so on. The analysis of websites was reduced to only the large-sized companies, therefore there exists an opportunity of expanding our sample to a medium-sized and small companies in our further researches.

The third constraint was also the small response rate, which is the general problem of all online surveys. The survey method could therefore be supplemented with the method of in-depth interviews by which we could get a more thorough and in-depth information from the users. The possibility for further researches shows itself also in the searching of factors that could explain why there are differences among the companies regarding the scope, content and presentation of the Internet accounting information.

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## Pričakovanja uporabnikov glede spletnega računovodskega poročanja

**Ozadje in namen:** S to raziskavo smo želeli ugotoviti kako pogosto se uporabniki poslužujejo spletnih strani za pridobivanje računovodskih informacij ter preučiti njihova stališča glede zanesljivosti, verodostojnosti, koristnosti in zadostnosti teh informacij. Hkrati pa smo želeli ugotoviti ali so ta pričakovanja skladna z dejanskim stanjem.

**Metodologija/pristop:** Raziskava je razdeljena na dva dela: v prvem smo proučili dejansko stanje glede spletnega računovodskega poročanja na primeru velikih slovenskih podjetji (n=110). V drugem delu pa smo z anketiranjem ugotavljali stališča uporabnikov (n=127) spletnega računovodskega poročanja. Ta pričakovanja uporabnikov smo nato primerjali z dejanskim stanjem in ugotavljali na katerih področjih prihaja do največjih razhajanj.

**Rezultati:** V raziskavi smo ugotovili, da 52,6 % podjetji na svoji spletni strani objavlja računovodske informacije in da se 40,2 % uporabnikov poslužuje teh informacij. Rezultati kažejo, da so anketiranci v povprečju najvišje ocenili koristnost računovodskih informacij, sledi zanesljivost, verodostojnost, najnižje pa so ocenili zadostnost.

**Zaključek:** Rezultati te raziskave lahko nudijo povratno informacijo podjetjem glede pričakovanj uporabnikov in to še posebej v primeru, ko so njihova pričakovanja večja od dejanskega stanja. V raziskavi smo ugotovili, da do teh razhajanj prihaja predvsem pri poročanju o finančnem stanju podjetja, saj uporabniki na spletnih straneh pogosto iščejo te informacije, vendar jih ne dobijo v zadostni meri.

**Ključne besede:** spletno računovodsko poročanje, pričakovanja uporabnikov, kazalnik IFR, računovodske informacije

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# Outline of Implemented Eco-innovation Activities – the Case of Clusters of South Eastern European Region

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**Background and Purpose:** Providing a win-win situation for enterprises and the environment is raising the importance of eco-innovation. This article sheds light on the eco-innovation activities implemented within the clusters of the South Eastern European region (hereafter the SEE region). The main objective of this paper is to provide an outline of the situation pertaining to the implementation of eco-innovation activities in analyzed clusters.

**Methodology:** Empirical evidence is provided through the performance of survey research with a sample of 52 clusters, encompassing 11 countries of the SEE region. The basic research method used in this research was a questionnaire developed for cluster organizations, with which we gathered the data and afterwards conducted descriptive statistics.

**Results:** The findings demonstrate that the majority of analyzed clusters implement eco-innovation activities. The results indicate that 40 clusters out of 52 in all have set objectives with regard to eco-innovation support in their national or regional programs, followed by 35 clusters, which include objectives related to eco-innovation in their cluster strategies, and lastly, only 15 clusters are primarily focused on eco-innovation. Hence, our study depicting the current situation regarding the implementation of eco-innovation activities in analyzed clusters and clusters' orientation towards eco-innovation leads to us the discussion of why such differences in clusters occur.

**Conclusion:** The huge differences related to the implementation of eco-innovation activities in clusters of the SEE region, can also reflect the level of the national/regional development in terms of economic indicators such as GDP and, at the same time, offer room for a lot of improvement, and an exchange of best practice.

**Keywords:** eco-innovation, clusters, SEE region

## 1 Introduction

The main goal of this paper is to depict the actual situation regarding activities related to the eco-innovation implemented in analyzed clusters, by encompassing 11 countries of South Eastern European region (henceforth SEE region). Our study derives from a project called Cluster PoliSEE (<http://www.clusterpolisee.eu/>) and provides an outline of the current situation regarding the implementation of eco-innovation activities in analyzed clusters and their orientation towards eco-innovation.

We are thus following Porter's (1998: p. 78) definition of clusters: "... geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufactures of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include

governmental and other institutions – such as universities, standards-setting agencies, think tanks, vocational training providers and trade associations – that provide specialized training, education, information and technical support”.

Moreover, Tessitore et al. (2010), based on a study of industrial clusters, proved that eco-innovation has the potential and power to strengthen the resilience of those enterprises of the cluster, which in a longer run show the ability to upgrade their strategic and managerial behavior in order to align with the most competitive challenges (here authors also count in environmental excellence). While Porter (1998) argues that clusters play a key role in enterprises’ ongoing ability to innovate and have also a vital role in being critical towards competition and impact competition in the following three ways: firstly, through the increased productivity of enterprises based in the area (enterprises which are a part of a cluster can operate more productively in sourcing inputs – better access to suppliers and employees; access of technology, information and needed institutions; coordination of related companies), secondly, clusters drive the pace and the direction of innovation, which is the underpin of future productivity growth and, thirdly, clusters induce the formation of new businesses, which expand and consequently strengthen the cluster itself (Porter 1998).

In our study, we have focused on eco-innovation activities performed in clusters. Therefore, we have posed questions regarding eco-innovation activities practiced among analyzed clusters and their orientation towards eco-innovation. We aimed to delineate the clusters’ orientation towards eco-innovation and review those eco-innovation activities, which are introduced among the analyzed clusters of the SEE region. In the second chapter of this paper, we will put emphasis on the benefits, which can be captured through the successful implementation of eco-innovations and present the eco-innovation’s peculiarities and its definition as well. The remainder of this article is structured as follows: section three presents the methodology and, further ahead, in section four, we reveal the results of the study leading to section 5, which offers a discussion of the results and concludes with the limitations of the study and future research directions.

## 2 Theoretical background of eco-innovation

Due to the enterprises’ negative impact on the environment, leading to serious global environmental problems, a global concern for the environment has also increased among researchers. Thereby, the topic of eco-innovation is gaining importance. Eco-innovation can be described as any new or significantly improved product (good or service), process, organizational change or marketing solution which results in the reduction of the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across the lifecycle (EIO 2010 in EIO 2013). Gmelin and Seuring (2014) have emphasized the is-

sue of sustainability and pinpointed that management should pay more attention to it, especially when it concerns new product development. Therefore, Pujari et al. (2003) stated that the logic of the design, for the environment approach, means that new environmental product development is not a radically different process compared to the conventional one. However, by adding a further level of complexity, this process must continue to deliver core benefits to customers, while also addressing stakeholder needs for improved eco-performance and manage any necessary trade-offs with existing core or auxiliary product benefits (Pujari et al. 2003: p.658).

Moreover, in order to reach a sustainable new product development, both lifecycle management and product lifecycle management should be involved (Gmelin and Seuring 2014). While, Pujari (2006) revealed that the factors, which affect market performance of greener products are found to be cross-functional co-ordination between new product development professionals and environmental specialists, supplier involvement, market focus and lifecycle analysis. When focusing on drivers of sustainable product development, Tsai et al. (2012) revealed that an important factor for the new product development strategy for green toys is customer benefit. However, Gmelin and Seuring (2014) suggested that there are both, internal and external triggers that motivate the sustainable development of new products.

Researchers also endeavored to delineate how and why eco-innovations differ from other innovations and argued that eco-innovations have to be properly researched as well. Rennings, already back in year 2000, emphasized the “double externality problem” of eco-innovations as its peculiarity and pinpointed that eco-innovations are triggered by the regulatory push/pull effect, which is not a common driver of other innovation types. All innovations produce common knowledge spillovers, while eco-innovations additionally bring positive externalities to those – environmental spillovers that result in the fact that society benefits from them, while the costs are borne by the enterprises, which practice and introduce eco-innovations (Rennings et al. 2006). In order to define eco-innovation, many attempts have been made, while Angelo et al. (2012: p. 117), following a literature review, have proposed the following definition of eco-innovation: “Eco-innovations are organizational implementations and changes focusing on the environment, with implications to companies’ products, manufacturing processes and marketing, with different degrees of novelty. They can be merely incremental improvements that intensify the performance of something that already exists, or radical ones that promote something completely unprecedented, where the main objective is to reduce the company’s environmental impacts”.

However, eco-innovations, through bringing benefits to the environment and to the enterprise, create a so called “win-win” situation (Horbach 2008). Therefore, we should be interested in how enterprises can successfully compete in changing markets and environments (Klewitz and Hansen 2013). Eco-innovations are oriented towards a whole

lifecycle of products, processes etc. with the aim of releasing less harmful substances into the environment through its production and thus harm the environment less – resulting in a reduction in environmental impact (Fraj-Andrés et al. 2009; Angelo et al. 2012; Horbach, Rammer and Rennings 2012; EIO 2010 in EIO 2013). Enterprises with successful implementation of eco-innovations can seize several benefits. One of those benefits is the gain of a competitive advantage (Shrivastava 1995; Tien et al. 2005; Chen et al. 2006; Triebswetter and Wackerbauer 2008; Fraj-Andrés et al. 2009; Ar 2012; Hofer et al. 2012; Mourad and Ahmed 2012; Wong 2012; Leonidou et al. 2013 Robinson and Stubberud 2013).

Other benefits derived from the eco-innovation deployment are eco-efficiency (Mourad and Ahmed 2012) and an improved firm's reputation (Shrivastava 1995). Eco-innovation also leads to improved firm performance (Clemens 2006; Zeng et al. 2011; Doran and Ryan 2012; Cheng et al. 2013; Cruz-Cázares et al. 2013; Rexhäuser and Rammer 2013). Moreover, the gain of sustainable growth in the domestic and international markets (European commission 2012), internationalization and improved export performance (Beise and Rennings 2005; Gurău and Ranchhod 2005; Martin-Tapia et al. 2008; Martin-Tapia et al. 2010; Cassiman and Golovko 2011; Aguilera-Caracuel et al. 2012; D'Angelo et al. 2013) are also among the benefits derived from successful eco-innovation implementation.

### 3 Methodology

The following results derive from a study, which has been conducted within the framework of the Cluster PoliSEE Project, comprising 11 countries (including: Albania, Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Serbia, Slovakia and Slovenia). The main aim of this project (Cluster PoliSEE) was to enhance the capability of policy makers to confront the situation in the field of entrepreneurial connections in clusters, predicting development and preventing non-desirable changes in entrepreneurial clusters' operations.

Data was gathered with a questionnaire applied to cluster organizations and consisted of closed questions, in our case regarding eco-innovation activities in cluster organizations. The main purpose of this questionnaire was to get a deeper understanding of eco-innovation adoption and successful implementation in analyzed clusters, followed by the identification of the main activities related to eco-innovation from the perspective of cluster managers. The theoretical background for the questionnaire development was found in scientific articles about clusters, different reports and studies about clusters in different European countries (Asheim 1996; Swann et al. 1998; Raines 2000; Diez 2001; Sölvell et al. 2003; Andersson et al. 2004; OECD 2007) as well as including some conceptualization. The questionnaire used in the project entitled Cluster PoliSEE was checked and re-developed several times within the group members respon-

sible for this activity (AWS Austria, Ecoplus, Austria and UP ZRS). The applied questionnaire was developed in the English language, which was also the language in which the respondents had to fill them out. The target respondent group for the questionnaire for cluster organizations (regarding eco-innovation activities) consisted of 3-4 clusters that partners deem "representative" in their country. Further on in our analysis, we will see that some countries or regions (in the case of Italy) included more than four clusters in the analyses and some just one.

The data collection method was that of a personal interview (or telephone interview if it was not possible to perform a personal one). The questionnaire was sent at least one week in advance so that cluster managers were able to prepare for the interview and inform respondents about the time needed. The respondents were cluster managers. Data was collected from 22 November 2012 to 22 January 2013 (approximately two months). To eliminate the bias of different interviewers, a unified Excel form was developed to fill in the answers to the questionnaire. This allowed us to have data that is more comparable across countries and regions for further analyses.

We have used general descriptive statistics in order to present the results of the study. No other more advanced statistical procedures were used for data analyses because of the small sample size and interpretative nature of the article (overview of the current situation regarding eco-innovation's activities).

#### 3.1 Questionnaire description

Our study derived from the project entitled Cluster PoliSEE. We have focused on the part that pertains to eco-innovation (comprising four questions with regard to eco-innovation activities) in the analyzed clusters, all from the SEE region. The respondents were, as aforementioned, cluster managers.

We have obtained general information regarding the eco-innovation activities with the following questions: 1) "Does the regional/national cluster program set any objectives with regard to support of eco-innovation?", 2) "Does your cluster strategy include any objectives related to eco-innovation?" and 3) "Is your cluster primarily focused on eco-innovation and, therefore, carries out a wide range of activities related to eco-innovation?"

Clusters were also urged to indicate what kind of activities related to eco-innovation they implement. The listed eco-innovation activities were the following: 1) Awareness-raising, 2) Distribution of information, 3) Training, 4) Support for introduction of eco standards, 5) Support for investments to improve eco-friendliness, 6) Initiation of/participation in eco R&D projects. The scale of the sum variable thus ranges from zero (no eco-innovation activity carried out) to six (all listed eco-innovation activities carried out).

## 4 Results

Firstly, we present the results for all countries together regarding orientation towards eco-innovation in the analyzed clusters of the SEE region and then in Table 1, we demonstrate results focusing on each single country. As second, we show the results focused on implementation of activities related to eco-innovation, followed by implemented eco-innovation activities within clusters of each single country. Our sample encompasses 52 clusters deriving from 11 countries, which have participated in the Cluster PoliSEE project. In more details, the number of questionnaires, which we received and were completed by cluster managers in each separate country (or in regions in case of Italy) are as follows: Albania (1 questionnaire), Austria (2 questionnaires), Bulgaria (4 questionnaires), Croatia (3 questionnaires), Greece (5 questionnaires), Hungary (3 questionnaires), Italy – Emilia Romagna region (8 questionnaires), Italy – Marche region (4 questionnaires), Italy – Veneto region (1 questionnaire), Romania (8 questionnaires), Serbia (5 questionnaires), Slovakia (4 questionnaires) and Slovenia (4 questionnaires).

Clusters that were comprised in our study deal with different area of operation/industries: tourism, textile, shoes, wood, pellet, energy, automotive, technology, dental and health tourism, biotechnology/pharmaceuticals and medical technology, green building, green construction, software, metal industry, wine promotion, furniture, electro-mobile, ICT, marine, organic agriculture, green energy, innovation (high-tech) and creative industry. The average number of cluster members in selected countries/region in year 2012 per cluster was 70, while the median was 34 cluster members. Moreover, average cluster structure is composed mainly of micro (42%) and small (30%) companies. These are followed by medium companies (10%), large companies (6%) and public bodies and intermediaries (7%). Financial institutions, R&D institutes, training and education providers, universities and technical colleges are represented just with a few members and just in certain countries.

### 4.1 Clusters' orientation towards eco-innovation

The overall results (see Figure 1) point out that 40 clusters from 52 participating clusters have confirmed that their national or regional cluster programs have set objectives with regard to eco-innovation support, therefore, just 12 of 52 clusters have answered that their regional or national cluster programs have not set any objectives related to the support of eco-innovation yet. Moreover, 35 clusters include objectives related to eco-innovation in their cluster strategies, while 17 of 52 analyzed clusters have not yet included any objectives related to eco-innovation. At last, 15 clusters primarily focus on eco-innovation and carry out a wide range of activities related to eco-innovation.

Furthermore, focusing on separate countries we can see from

Table 1 that in Albania and Veneto region (Italy) national or regional cluster programs have not set any objectives related to the support of eco-innovation yet. On contrary, we can see that all clusters of the Emilia Romagna region (Italy), Serbia (all five clusters), Marche region – Italy (all four clusters), Slovenia (all 4 clusters), Bulgaria (all four clusters) and Croatia (all three clusters) have confirmed that objectives related to eco-innovation support deriving from national or regional programs have been set.

Nonetheless, a high number of positive responses regarding the setting of objectives related to the support of eco-innovation in regional or national programs can be seen in the following countries: Slovakia (three of four clusters), Greece (three of five clusters), Romania (three of eight clusters) and Hungary (two of three clusters).

In addition, it also shows how many clusters from each single country include objectives related to eco-innovation in their cluster strategies. Thus, Table 1 illustrates that in Serbia and in Marche region (Italy) all of the analyzed clusters in both cases include objectives related to eco-innovation in their cluster strategies. These are followed by seven clusters (from eight in total) from region Emilia Romagna (Italy), which include in their cluster strategies the objectives related to eco-innovation.

Also, in the following countries the majority of the analyzed clusters from each country include objectives related to eco-innovation in their cluster strategies: Croatia (two clusters out of three), Greece (three clusters out of five), Slovakia (three clusters out of four) and Slovenia (three clusters out of four). In Austria, Bulgaria and also Romania we can see that 50 % of analyzed clusters include the objectives related to eco-innovation in their cluster strategy. In Hungary, just one cluster includes the objectives related to eco-innovation in their cluster strategies. Lastly, in Albania and the Veneto region (Italy) no cluster includes the objectives related to eco-innovation in their cluster strategies.

In the last column of Table 1, we can see how many clusters in each country primarily focus on eco-innovation and carry out a wide range of activities related to it. In Albania, Hungary, Veneto region (Italy) and Serbia, no cluster primarily focuses on eco-innovation. While in Marche region (Italy), the primary focus on eco-innovation is presented in three clusters out of four in total. Additionally, the countries where the primary focus on eco-innovation is presented in 50 % of the analyzed clusters are the following: Austria (one cluster of two in total), region Emilia Romagna from Italy (four clusters of eight in total) and Slovakia (two clusters of four in total).

Table 1 presents frequencies regarding positive responses of all the analyzed clusters joined together for each country (e.g. in the last column the results depict how many clusters within the analyzed ones from each country are primarily focused on eco-innovation).

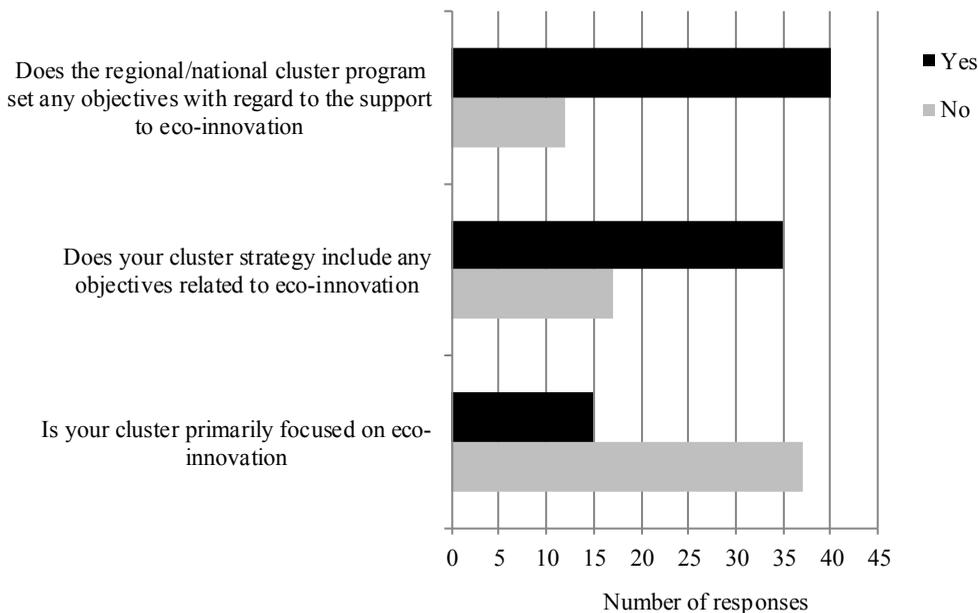


Figure 1: Orientation towards eco-innovation within the analyzed clusters of the SEE region (for the overall sample). (Source: Authors)

## 4.2 Clusters' implementation of eco-innovation activities

In the second part of the results, we focus on eco-innovation activities implemented in the analyzed clusters. The overall results (see Figure 2) indicate that among the listed activities related to eco-innovation, analyzed clusters in majority carry out the following activities: initiation of/participation in eco R&D projects (42 clusters), followed by training (41 clusters), distribution of information (41 clusters) and awareness-raising (41 clusters). However, the activities which are related to eco-innovation and less carried out by all the analyzed clusters are the support for the introduction of eco standards (39 clusters) and the support for investments to improve eco-friendliness (38 clusters). While the least implemented activities related to eco-innovation in the analyzed clusters are classified in the category other (eight clusters), meaning that the analyzed clusters do not implement many other activities related to eco-innovation besides the listed ones.

Moreover, we present the results regarding the implementation of activities related to eco-innovation in the clusters of each participated country (the results are presented/displayed in frequencies for each country, meaning that frequencies for every single eco-innovation activity have been computed through all the analyzed clusters for each country separately). Here we have to emphasize the fact that the Albanian cluster and the cluster from Veneto region (Italy) do not implement any of the listed eco-innovation activities,

therefore, the figure is blank when regarding them and this presents a total absence of activities related to eco-innovation.

The results (see Figure 3) have revealed that Austrian clusters implement all activities related to eco-innovation to the same extent (1 for each one), while they do not engage in activities related to the support for investments to improve eco-friendliness. Bulgarian clusters implement to the largest extent the activities regarding training (3) and distribution of information (3), while the least implemented eco-innovation activities of Bulgarian clusters are the support to introducing eco standards (1) and other (1 = extended life cycle standards). The most implemented activities related to eco-innovation in Croatian clusters are initiation of/participation in eco R&D projects (2) and distribution of information (2), while all the other listed activities related to eco-innovation are implemented to a lower extent (1 for each activity related to eco-innovation). Meanwhile, Greek clusters mostly implement activities such as: initiation of/participation in eco R&D projects (3) and training (3), while all other activities related to eco-innovation in Greek clusters are less implemented (2 for each eco-innovation activity).

The most implemented activities related to eco-innovation in Hungarian clusters are: awareness-raising (1), distribution of information (1), support to introducing eco standards (1) and support for investments to improve eco-friendliness (1). The activities such as initiation of participation in eco R&D projects and training are completely absent in Hungarian clusters. Regarding Italy, the analyzed clusters deriving from Emilia Romagna region (Italy)

mostly implement activities such as awareness-raising (6) and distribution of information (6), followed by the least practiced activity which is training (2).

However, in the Marche region (Italy) clusters implement to the same extent the following activities related to eco-innovation: awareness-raising (3), distribution of information (3), training (3), initiation of/participation in eco R&D projects (3) and support for introduction of eco standards (3), while the least implemented activity is the support for investments to improve eco-friendliness (2). Furthermore, initiation of/participation in eco R&D projects (4), awareness-raising (4) and distribution of information (4) are eco-innovation activities, which are mostly implemented in Romanian clusters. They engage the least in supporting investments to improve eco-friendliness (1).

Moreover, awareness-raising (5) and distribution of information (5) are implemented to the largest extent in Serbian clusters, while training (1) is implemented to the lowest extent. We can see that Slovak clusters mostly implement the following activities: awareness-raising (4) and distribution of information (4), while they do not engage in supporting investments to improve eco-friendliness. Lastly, the most implemented activities regarding eco-innovation within the scope of Slovenian clusters are: awareness-raising (4), distribution of information (4), followed by the least implemented activity, which is classified as other (1 = development of assessment criteria for sustainable building). In addition, Slovenian clusters also do not implement any support to investments to improve eco-friendliness.

Table 1: Orientation towards eco-innovation within the analyzed clusters of the SEE region (presented for the participating countries).

	<b>Number of analyzed clusters</b>	<b>Does the regional / national cluster program set any objectives with regard to the support to eco-innovation</b>	<b>Does your cluster strategy include any objectives related to eco-innovation</b>	<b>Is your cluster primarily focused on eco-innovation</b>
Albania	1	0	0	0
Austria	2	1	1	1
Bulgaria	4	4	2	1
Croatia	3	3	2	1
Greece	5	3	3	1
Hungary	3	2	1	0
Emilia Romagna region (Italy)	8	8	7	4
Marche region (Italy)	4	4	4	3
Veneto region (Italy)	1	0	0	0
Romania	8	3	4	1
Serbia	5	5	5	0
Slovakia	4	3	3	2
Slovenia	4	4	3	1

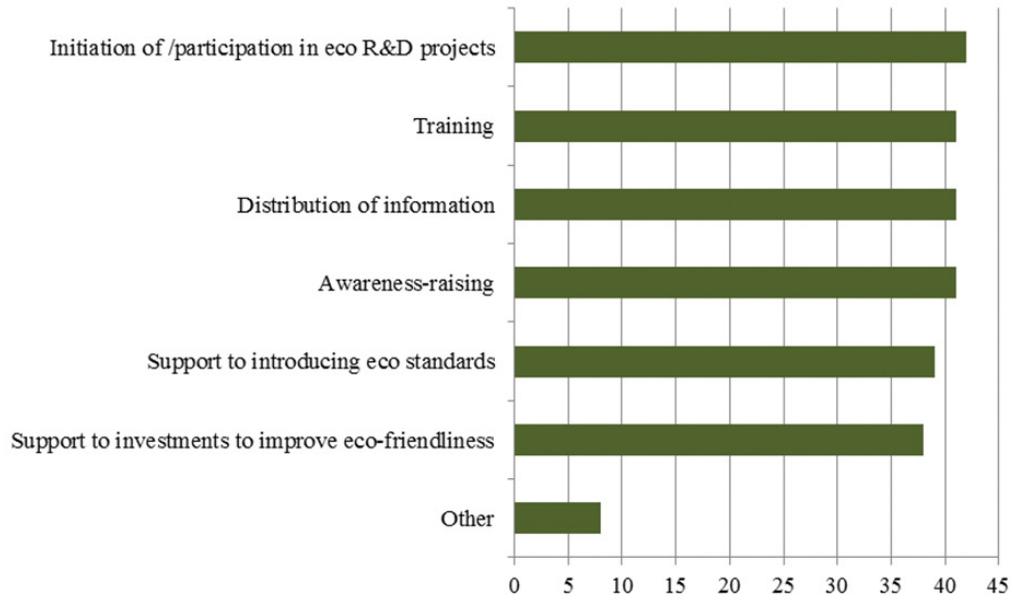


Figure 2: Implemented eco-innovation activities in the analyzed clusters of countries from the SEE region (Source: Authors).

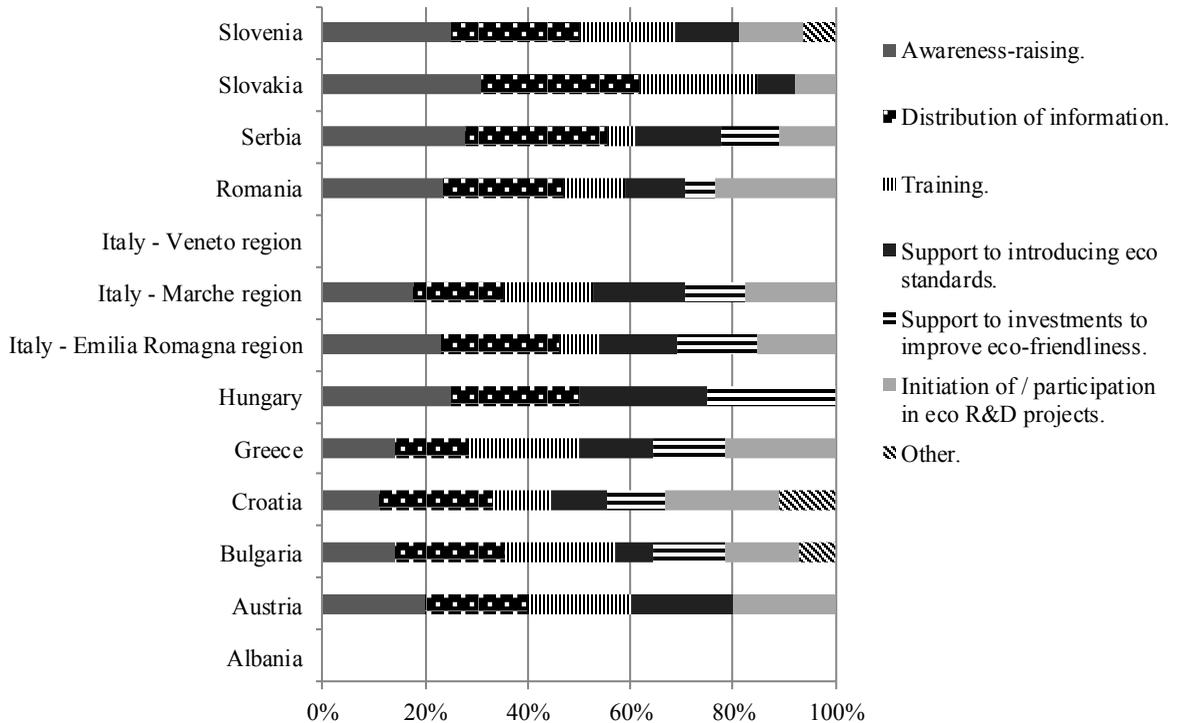


Figure 3: Eco-innovation activities implemented in the analyzed clusters (in frequencies) of 11 countries, encompassing the SEE region (Source: Authors).

Table 2: Descriptive statistics (median values, mean values and standard deviations) regarding the implemented eco-innovation activities in the analyzed clusters of the SEE region

	Median value (Me)	Mean value (M)	Standard deviation (SD)
Albania	0,00	0,00	0,00
Austria	0,50	0,42	0,20
Bulgaria	0,50	0,54	0,19
Croatia	0,33	0,44	0,17
Greece	0,40	0,47	0,10
Hungary	0,33	0,22	0,17
Emilia Romagna region (Italy)	0,50	0,54	0,19
Marche region (Italy)	0,75	0,71	0,10
Veneto region (Italy)	0,00	0,00	0,00
Romania	0,38	0,35	0,17
Serbia	0,50	0,60	0,33
Slovakia	0,50	0,54	0,43
Slovenia	0,63	0,63	0,38

## 5 Discussion

In this section, we first present and discuss clusters' implementation of eco-innovation activities based on average and median values for each country. Section 5 concludes with conclusions, limitations of this study and future research directions.

### 5.1 Discussion regarding clusters' implementation of eco-innovation activities

In Table 2, we present descriptive statistics (median, mean and standard deviation) regarding the implementation of eco-innovations within the analyzed clusters of the SEE region. With an aim to delineate and in order to provide representative data for each country regarding the implementation of eco-innovation activities and to be able to compare them (at least roughly), we have estimated the presented descriptive statistics through two steps. Firstly, we have computed all eco-innovation activities in the analyzed clusters pertaining to every single type of eco-innovation activity separately for each country and divided them with a number of the analyzed clusters (to ensure that the mean value could be more representative, because the number of analyzed clusters varied among the countries).

Secondly, we have calculated mean values regarding the performed eco-innovation activities within different countries (for each country all types of eco-innovation activities were computed and then divided with the number of eco-in-

novation activities = six of them). Nonetheless, mean values could not reflect the actual situation – are not representative enough; we have used in addition the median values, which are far more appropriate in our case.

Additionally, Figure 4 illustrates the median values of eco-innovation activities performed in the analyzed clusters for each of the participating country. What we need to emphasize is, that these results are focused just on our sample, comprising the analyzed clusters, which have participated in the Cluster PoliSEE project. Hereby, we can see from Figure 4 that Marche region from Italy is a leader in the implementation of eco-innovation activities, when, regarding the median value, it is followed by Slovenia.

High median values with regard to the implementation of eco-innovation activities are represented also in the following countries: Austria, Bulgaria, Emilia Romagna region (Italy), Serbia and Slovakia (all of them with equal median value). These are followed by Greece and Romania. Meanwhile, Croatia and Hungary (both with equal value of median) demonstrate the lowest median values pertaining implementation of eco-innovation activities (focusing on the analyzed clusters). At this point, we need to emphasize also that Veneto region (Italy) and Albania have not reported any eco-innovation activities implemented in the analyzed clusters.

Even though that all countries, with exception of Albania and Veneto region (Italy), implement eco-innovation activities to a certain level (some of them to a higher and some of them to a lower extent), we can notice big differences among the analyzed clusters of the participating countries

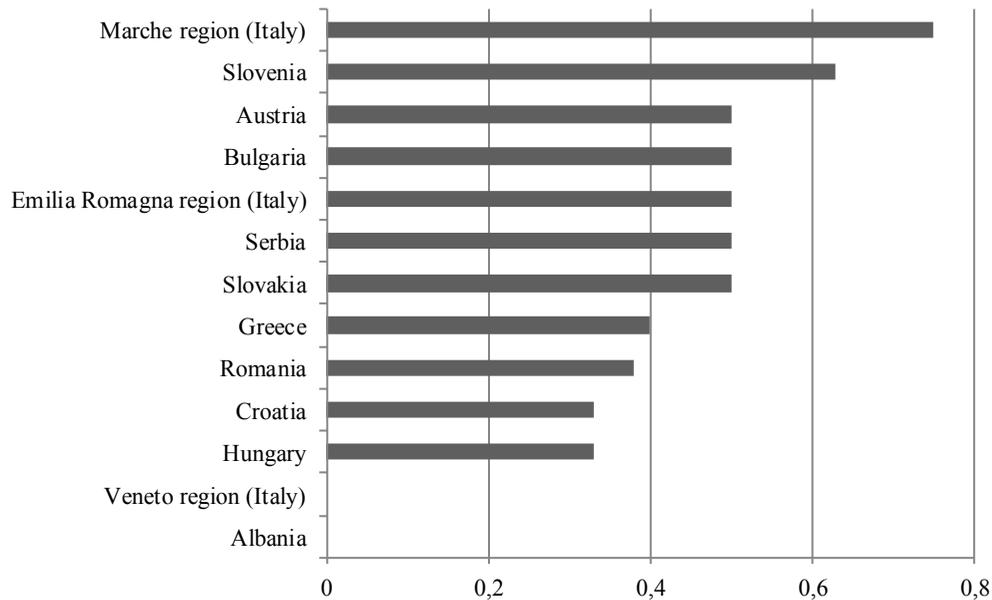


Figure 4: Median values of the implemented eco-innovation activities in the analyzed clusters of South Eastern European region countries. (Source: Authors)

(see Table 2 or Figure 4). These differences can also reflect the level of national/regional development in terms of economic indicators as GDP and the offer and at the same time a room for a lot of improvements, knowledge and best practices exchange. Albeit we think that, this is not the main reason for which such differences occur. Regarding mean values, we believe that some countries have probably not included the most representative clusters with regard to the implementation of eco-innovation activities. Perhaps these clusters were not eager to cooperate.

Therefore, a better explanation of the obtained results (especially pertaining to mean values) is that countries, which have participated in the study have not necessarily gathered the data from the most representative clusters in the country (note also that clusters encompassed in the analyses of the Cluster PoliSEE project were a personal choice of project partners) and this can lower mean values. In order to avoid this inconvenience we have presented also median values.

A surprising fact pertaining to the aforementioned discussion is also that Marche region (Italy) is the leader in our study regarding the performance of eco-innovation activities, also median and mean values of Emilia Romagna region (Italy) are still among high ones, while on contrary, Veneto region, also belonging to Italy, has not reported any eco-innovation activities at all. Here we posit the question. If clusters comprised in our study are not representative, why other (perhaps) more representative clusters have not participated in the study, if they exist? We interpret the results that derived from our study and emphasize that the number

of clusters is too low to generalize the findings, but at least gives space to open a discussion how to motivate the most “representative” clusters to cooperate in studies.

In conclusion, the differences are largely under the impact of the representativeness of the analyzed clusters encompassed in the study. Because of an unequal number of the analyzed clusters from the countries comprised in our study, each eco-innovation activity was divided with a number of clusters in order to provide mean values that are slightly more suitable. Additionally, we have presented also median values and interpreted them.

Clusters provide both, competition and cooperation alike and, in addition to enhancing productivity, they play a crucial role in enterprise’s ongoing ability to innovate (Porter 1998). Similarly, Lindqvist et al. (2013) stressed the relevance of clusters for innovation, especially because of a critical mass in a location of a sector or industry. Clusters have a better window on the market compared to their isolated competitors and, as well, they provide the capacity and the flexibility to act rapidly (Porter 1998). Their main advantage is that different actors can support each other and the effect of (un)planned meetings and interactions are new ideas (Lindqvist et al. 2013).

Moreover, over the time the concept of innovation has grown stronger in relation to clusters and in more organized clusters innovation is really at the heart of what clusters should be about (Lindqvist et al. 2013). This is in line with our results (see Table 1), where it can be seen that the majority of clusters confirm the setting of objectives with regard to the support of eco-innovation in their

regional/national program and/or include those objectives in their cluster strategies. Some of them are also primarily focused on eco-innovation.

According to the theory, the presence or absence of eco-innovation priorities in cluster policies might be related partially to the wider policy framework and the support to eco-innovation available in each one of the countries (Barsoumian et al. 2011). Therefore, in countries where eco-innovation policy framework supports the development and uptake of eco-solutions or in countries that have older cluster policies, it is more likely that also eco-innovation cluster policies are in place (Barsoumian et al. 2011). However, we can see that countries with longer cluster policy history confirm setting of the objectives related to the eco-innovation support in their national/regional cluster programs, also in their cluster strategies they consequently implement eco-innovation activities to a greater extent, while the ones with the shorter cluster policy history are weaker in all of the aforementioned criteria.

Moreover, referring to our study, we can see also that our findings are consistent with the prior research and theory, which suggests that voluntary engagement of enterprises steers them towards greater implementation of eco-innovation (Doran and Ryan 2012). Therefore, clusters from countries, which confirm setting the objectives to the eco-innovation support in their regional/national cluster programs objectives, or include those objectives in their cluster strategies, or primarily focus on eco-innovation, implement also more eco-innovation activities and rank higher (with regard to the median values) compared to the ones that do not satisfy any of previously mentioned three conditions. Similarly, theory suggests that enterprise' strategies and their primary focus, which are set up in order to support eco-innovation, as a result induce the development of green products (Laperche and Uzunidis 2012).

In addition, Plambeck (2012) stress that enterprise' strategy has direct and indirect impact on its innovative behavior and, therefore, affects the level of innovativeness of the responses related to environmental changes. Our conclusion derived from this study, is that clusters have an important role in dissemination of eco-innovation activities within companies grouped in clusters and therefore, more emphasis should be given to implementation of the objectives related to the support of eco-innovation in their cluster strategies.

## 5.2 Conclusion, limitations of the study and future research directions

The major evidence arising from the analyses performed is the big difference regarding the level of cluster policy development and operations of cluster organizations that affects the clusters' implementation of eco-innovation activities as well. Therefore, the biggest challenge for policy makers will be in the lowering of such differences and in homogenization of operating conditions for clusters, with focused actions adapted to their level of development. One of the

biggest opportunities lies in the knowledge transfer and the transfer of good practices from more to less developed regions/countries/cluster organizations. One potential solution to lower such disparities would also be in the development of focused international cluster networks, with an aim to transfer accumulated knowledge, good practices and experiences on different levels; policy makers, cluster organization's and cluster members.

One of the biggest limitations of this study is the huge difference in the level of development and operations of cluster policy and, therefore, it was hard to suggest some generalized conclusions. Being a limitation, big differences in the level of cluster policy bring at the same time also the opportunities for learning and improving them, especially with the possibility of knowledge transfer and implementation of best practices across countries and regions. The second limitation was the selection of "representative" clusters, proposed by project partners in their country/region, which is related also to the comparability of knowledge of the way in which the data collection was performed by different interviewers.

It was almost impossible to verify this element, because certain countries have very little clusters, with a short cluster policy history (e.g. Albania), while in other countries there is a rich cluster presence and "history". The next limitation concerns the sampling. Actually, project partners selected to interview the clusters they wished (they chose clusters that regarding to their opinion were the most representative in their country), but such cluster may not be really representative for their region or country. Therefore, the analyzed clusters were not chosen randomly, but according to the opinion of project partners (choosing the most representative ones among all clusters).

This is also related to the number of clusters in certain countries or region. In the less developed countries, actually, clusters just started "to establish" and it is expected they would deal with totally different problems and challenges than clusters in developed countries, with longer cluster policy tradition. The fourth limitation is pertaining to data analyses (because of very small sample size, just basic statistical methods have been used—in our case the descriptive statistics).

As well, the sample was quite small for conducting any more advanced analyzes. At the beginning, we have already emphasized that our study is merely an outline of the current situation, regarding the implementation of eco-innovation activities by analyzed clusters. Finally, the last limitation pertains to low response rate. Therefore, researchers should in future take into consideration the low response rate and discuss how to motivate more representative clusters to complete the questionnaires and also maintain the equal number of clusters from each country with a goal to avoid other problems occurring at the stage, when examining the results.

In future research work we should include a higher number of clusters and gain more information regarding the implementation of activities related to eco-innovation.

This would contribute to the research field of eco-innovation in clusters and as well provide results, which could be generalized.

However, our study is a scan of the current situation and offers a lot of space to improve. In future, we could comprise information about eco-innovation activities in clusters and categorize them in eco-product, eco-process and eco-organizational innovation. Therefore, it would be meaningful to explore which factors drive each type of eco-innovation and which type of eco-innovation is more beneficial for clusters to implement. We could as well explore the barriers of deployment of eco-innovation in clusters and the factors that spur clusters in eco-innovation deployment. An interesting area of research could also comprise a new eco-product development – a research on how clusters approach it. An interesting point of research would also be exploration of the benefits, consequences that have been seized by clusters' successful implementation of eco-innovations.

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## Oris dejavnosti vezanih na eko inovacije – podjetniški grozdi v regiji Jugovzhodne Evrope

**Namen:** Eko inovacije zagotavljajo tako imenovano win-win situacijo, ko zmagata obe strani – v tem primeru podjetje in okolje. S tem si eko inovacije dodatno zvišujejo svoj pomen. Namen tega članka je prikazati/zagotoviti oris stanja dejavnosti vezanih na eko inovacije, na primeru podjetniških grozdov v regiji Jugovzhodne Evrope.

**Metodologija:** V članku so prikazani rezultati raziskave izvedene na vzorcu podjetniških grozdov, v 11 državah Jugovzhodne Evrope. Za pripravo pričujoče analize je bil pripravljen vprašalnik sestavljen iz osnovnih vprašanj, povezanih s posameznimi skupinami, s kombinacijo odprtih in zaprtih vprašanj. Cilj vprašalnika je bil pridobiti pregled nad podjetniškimi grozdi in dejavnostmi vezanimi na eko inovacije. Analiza podatkov je bila opravljena s preprostimi opisnimi statistikami.

**Ugotovitve:** Ugotovitve kažejo, da večina analiziranih podjetniških grozdov izvaja dejavnosti vezane na eko inovacije. Nadalje, rezultati kažejo, da je 40 podjetniških grozdov (od skupno 52) postavilo cilje vezane na podporo eko inovacijam v nacionalnih ali regionalnih programih. Tem sledi 35 podjetniških grozdov, kateri vključujejo cilje vezane na eko inovacije v svoji strategiji. Medtem ko je le 15 podjetniških grozdov primarno osredotočenih na eko inovacije. Obstoječe razlike v dejavnostih vezanih na eko inovacije nas skozi članek vodijo do diskusije zakaj se le te pojavljajo.

**Originalnost:** Če povzamemo vse ugotovitve pričujoče analize je potrebno najprej poudariti velike razlike v obravnavanih državah glede dejavnosti vezanih na eko inovacije. Te razlike so lahko tudi odraz nacionalnega/regionalnega razvoja, v smislu gospodarskih kazalcev, kot je BDP. Istočasno pa nudijo mnogo priložnosti za izboljšanje in izmenjavo dobrih praks.

**Ključne besede:** eko inovacije; podjetniški grozdi; regija Jugovzhodne Evrope

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# Organizational and Managerial Challenges of Reforming Slovenian Public Agencies

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**Introduction:** Agencies are among the key contemporary public organizations, prospering within reforms carried out worldwide to increase professionalism and rationalism in public administration (PA). Hence, countries have been establishing agencies and delegating them public tasks in order to achieve expertise-based instead of politically-driven and thus more efficient public policies. In such context, the present article addresses the most important strategic documents related to public administration reform (PAR) in Slovenia, analyzing their goals in terms of agencification and the main implementation results and gaps.

**Research Design:** The research is dedicated to exploring the governmental approach to agencification as a key aspect of PAR. It analyzes (1) the main PAR strategic documents on public agencies in Slovenia since the mid-90s, and (2) the perceived implementation of structural and managerial autonomy as the declared goal of agencification. Combined research methods are applied, including descriptive analysis, regional comparisons, structural interviews among representatives of public agencies and their parent ministries, and selected statistical data analysis.

**Results:** As proven by different research methods, the hypothesis whereby agencification goals in Slovenia are largely achieved as part of PAR documents in terms of autonomous organizational structure was confirmed. A more elaborated agencification in PAR documents relates to higher implementation of autonomy.

**Conclusion:** Nevertheless, the professionalism of Slovenian agencies is still an on-going process, particularly as regards the efficiency implementation gap. As for the future, a more consistent PAR incorporating cross-sectoral policy on agencies is required to pursue the development of a democratic and efficient PA.

**Keywords:** public administration reform; agencies; autonomy; organization; management; Slovenia.

## 1 Introduction

Public administration (PA) reforms (PAR) and cross-sectoral restructuring, such as agencification, are highly complex processes. Being interdisciplinary and long-term oriented, politics-in-power dependent, etc., these reforms are generally addressing the PA wicked problems. Their characteristics are even more pronounced in cases where the main goal of reforms seems to be a shift in the governance mode (cf. Politt and Bouckaert, 2011: 9, Bevir et al., 2011: 17 and the following).

Owing to significant societal changes, especially in Eastern Europe in the past decades, PA reforms are the never-ending story of contemporary society (cf. Vintar et

al., 2013: 154 and the following). The agency model of PA functions is declared as an inevitable part of PAR (also in Eastern Europe, Musa & Koprič, 2011: 34, Van Thiel, 2011: 16, Verhoest et al., 2012: 414–420). Moreover, managerialism and the agency model of PA are recognized as important theories for (post-) NPM related reforms in general (Boston, 2011: 20). A governance-related debate in PA in this sense was brought to the fore in the mid-1990s, mainly with the debate about hollowing-out of the state (as defined by Politt & Talbot, 2004; Bugarič: 2004: 1394). Consequently, the need for introducing a new reform package in the field was put forward (more in Peters & Pierre, 2005).

Semi-autonomous and autonomous agencies have a rather long tradition in the region – in fact, they have been present in certain fields for more than 20 years

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(Koprić et al., 2012/13: 18). According to the typology in comparative terms (see Verhoest et al., 2012: 20–23), Slovenia mainly established what are known as type 1 (executive, mainly semi-autonomous, still structured within ministries) and type 2 (mainly regulatory, organizationally autonomous) agencies. The article focuses on type 2 agencies as they are (or are supposed to be, following the criteria of organizational and managerial autonomy), the “true” independent type of PA forms.

Agencification is indeed an important research area and is further stimulated by the recent development of the theoretical framework of PAR, based on post-New Public Management (NPM) and good governance concepts (see Christensen & Lægheid, 2011: 391–403, Bevir et al., 2011: 256). Reforms are in fact conducted through networking and open structures rather than authoritatively and from top to bottom (Bever et al., 2011: 286 and the following). Within the concept of good governance, this approach of the state will eventually lean from authoritative and centralized to a service-oriented and decentralized one, among others by agencification.

Following PA governance theories, starting with NPM, the article is addressing PAR goals and results related to public agencies and the overall agencification process in Slovenia and in the region. The article has several aims since open issues are emerging as a result of the lack of a relevant study on agencification within PAR so far. In other words, the objective of this research is to interlink PAR strategic design with the achieved implementation of organizational and managerial autonomy in public agencies (in Slovenia). The umbrella aim of the article is to introduce the idea of an inevitable need to plan and implement agencification as a cross-sectoral public policy and part of a centrally driven PAR. Otherwise, the declared goals of a more efficient and professional PA will not be reached.

The basic assumption is that a more systematic elaboration of agencification within strategic PAR documents would lead to higher autonomy and professionalism in performing the agencies’ public tasks. Moreover, the study aims to identify the key elements of agencies’ autonomy as the primary characteristic goal of agencification. Since agencification is not consistently part of PAR in Slovenia, most experts and agencies’ managers anticipate that their autonomy will not be fully implemented (yet).

The research questions are primarily addressing structural reorganization and managerial autonomy of the agencies. Together with the corresponding descriptive and empirical methods, they tackle several issues. Firstly: To what extent and in which aspects do the central PAR strategies focus on public agencies? Secondly: Do these goals correspond to the ones acknowledged in theoretical and comparative analyses, namely autonomy and efficiency? Thirdly: What is the level of implementation of organizational and managerial autonomy in Slovenian public agencies compared to PAR goals? The first two questions are addressed by descriptive analysis and comparative studies. The third question is examined

within normative and statistical analysis of HR and finances in all Slovenian state public agencies and as an evaluation perceived by interviewees from seven selected agencies and their parent ministries in different fields.

The interviews were conducted in a structured model, addressing theoretically defined aspects of autonomy. The objective indicators from the annual reports of respective agencies were verified by these selected perceptions. Yet, in order for the PAR or any other public policy to be analyzed and run further on the basis of feedback about their hitherto implementation, at least the general and qualitative criteria of evaluation still need to be developed. This article represents an initial attempt in this direction.

## 2 Organizational and Managerial PAR on Agencies – Overview

Worldwide, administrative reforms have been implemented as a process of modernization since the late 1980s. The term “public-administration reform” has been in frequent use in Western European democracies, being closely associated with general attempts at redefining the role and mission of state structures and the quality of governance (more in Pollitt & Bouckaert, 2004, Eymeri-Douzans & Pierre, 2011). These reform waves reached Slovenia and the rest of the post-socialist countries in the 1990s along with their respective independence processes, characterized as an attempt to constitute a system resembling the Western societies (in general Dunn et al., 2006; Kovač & Virant, 2011: 30; Vintar et al., 2013: 156). The PA reform in Eastern Europe was more or less a systematic set of strategies and measures, at least from the mid-1990s to 2013.

Until full membership, PAR in respective countries, also in Slovenia until 2004, was closely related to the aspirations to join the EU. The main differences between CEE and Western European countries are therefore in the timing and variation, but not in the substance of PAR and agencification (Van Thiel, 2011: 15–32). Likewise, similarities between CEE countries appear to be related more to the timing of state reforms and EU accession requirements than to the communist legacy of these countries.

Agencification is often declared as a crucial part of PAR, striving for increased efficiency and professionalism of PA (OECD, 2004: 15 and the following). Such approach is common worldwide (Peters and Pierre, 2005: 260). Agencies prove to bring more value added to traditional Weberian hierarchy in modern complex society than side effects (Koprić et al., 2012/13: 41).

Slovenia is considered one of the most successful post-socialist states that introduced reforms in its PA soon after gaining independence and has been working intensely on these processes ever since (Vintar et al., 2013: 153). The country indeed underwent deep changes, starting with independence in 1991 and followed by full EU membership in 2004. Recently, the Slovenian administrative system was

severely affected by the economic crisis. The main focus of the reform in Slovenia was on PA reorganization and its rationalization, with some (later more emphasized) measures to achieve a more user-oriented PA. The delegation of authority from state administration to independent and autonomous agencies was seen as a measure meeting all listed directions of PAR (see Table 1, elements based on Pollitt et al., 2008/09 and Eymeri-Douzans & Pierre, 2011: 121).

Despite some achievements of Slovenia (alone and regionally, see Kovač & Virant, 2011: 42, 255 and the following), it is not surprising that the export of Western practices, agencification process included, led to a significant implementation gap. Agencification and PAR in general often met with a number of politically and managerially conditioned difficulties. The same applies for agencies, while Slovenian strategies and results mostly resemble the Eastern European pattern. Here, comparative studies on agencification distinguish two groups, namely CEE countries and SEE countries, differing in terms of number and especially level of type 2 agencies' autonomy (see Verhoest et al., 2012: 23, UNAID, 2013: 25, but none of Eastern European countries included in Christensen & Læg Reid, 2011). In this context, PAR and agencification are more about "window dressing" than about an internally driven transformation of PA toward NPM and good governance modes.

As explored by Pollitt & Bouckaert (2011, cf. Randa-Liiv, 2008) on public management reform, there are two main PA and PM reform approaches or models. First, there is what is known as traditional or classical Weberian model, with agencies as mostly internal form of coherent and

hierarchical PA. Second, there is the Neo-Weberian State, upgrading the first model and (post-) NPM doctrine, characterized by four dimensions. These items all reflect (see Table 1) one or more key PAR goals or results in relation to the functioning of (public, autonomous) agencies. With focus on the main research issue, namely agencies' autonomy, one can identify the following elements of agencification within Neo-Weberianism. First, by re-shifting agencies, their tasks and resources to indirect PA, prior internal rules orientation is transformed into an external, citizen-oriented focus and post control. Second, by means of professionalism, agencies gain expertise-driven legitimacy, which replaces direct representative democracy. Hence, there is a shift from a classical 'bureaucrat' to a professional manager who is oriented to meet the needs of the citizen.

Similarly to other countries in the region, Slovenia carried out its PA reform in several steps. Firstly, there was the path of revolution (1990–1994), further transition (1995–1997) and EU accession and integration (1996–2004). Afterwards, continuous modernization was developed through specific policies (2003–2008). Finally, adjustments to cope with the economic crisis were made (2008–2014). Likewise, also PA development in general (beyond Slovenia) consisted of several phases (according to Lane, 1995): (1) transformation (i.e. establishment of a new, democratic political system with several political parties, regular elections, local self-government, etc.); (2) consolidation (i.e. stabilization of political system, new opportunities for privatization, denationalization, and implementation of free market elements); (3) modernization (i.e. reform of public institutions,

Table 1: Slovenian PAR (Neo) Weberian and NPM focuses – agencification relevance (source: based on Pollitt et al., 2008/09, and Pollitt & Bouckaert, 2011)

<b><i>Core claim elements of Neo-Weberianism in Slovenia</i></b>	<b><i>General PAR orientation 1996–2014</i></b>	<b><i>Relevance to public agencies</i></b>
<b><i>Classical PA "Weberian" elements</i></b>		
State as the main facilitator of society	Medium	High
The role of representative democracy	Medium	High
Basic principles of administrative law	High	Medium
A public service with a distinctive status	Medium	Medium
<b><i>"Neo-Weberian" &amp; post-NPM &amp; good governance elements</i></b>		
External orientation towards citizens	High	High
Rationalization with post control	High	High
Professionalism of public service	High	High

their reorganization and gradual deregulation); and (4) adaptation (i.e. establishing efficiency and effectiveness of the state and its regulation). In Slovenia, just like in comparable countries, two main processes can be identified in the PAR context: (1) modernization in terms of political interests and in substantive and technical terms, i.e. informatization, and (2) Europeanization, both during accession to the EU and as a member thereof (Vintar et al., 2013: 159, cf. Pollitt et al., 2008/09: 56). Agencification would fit no earlier than within Lane's (1995) phases of modernization and adaptation (3 and 4) and within both main PAR processes: modernization and Europeanization.

However, most strategic documents (cf. Government, 1996, 2003, 2011, 2012, see Table 3) merely refer to the adoption of new law(s) rather than to overall field transformation which would also involve a change of culture (as opposed to only structural elements). The mid-term strategy "on further development of the public sector" (adopted in July 2003) and, particularly, Slovenia's Development Strategy (2005–2013) and the Exit Strategy (from economic crisis, 2010) underlined the importance of a coordinated approach to modernization. Any reform would be evaluated as to the goals pursued, which is either to maintain (what is functioning well), modernize (i.e. harmonize the operations with broadly accepted concepts and standards), marketize (bring PA closer to the principles and operations of the private sector), or minimize the public share (Pollitt & Bouckaert, 2004: 39–64). The Slovenian administrative reforms can thus be categorized under several targets. On one hand, there is the obvious goal of rationalization and wish for greater efficiency (minimization), while on the other a confirmation of the existing regulation (maintenance) is detected. Both dimensions together constitute the omnipresent Slovenian PA modernization processes.

Agencies, especially independent regulators, have certain typical advantages but also raise some concerns, as stated by several scholars and comparative studies (such as Kovač & Virant, 2011: 70 and the following, Verhoest et al., 19 and the following). The delivery of public tasks can become more efficient because they are specialized, oriented to specific areas or sectors and able to engage specific expertise. They can be more devoted to their missions and to general public interest because they do not have to take into consideration wider, i.e. political circumstances. On the other hand, there are concerns as to their accountability, transparency and technocratic risks. As regards agencies as independent regulators, there are frequent complaints about either political or sectoral capture. This means that they are actually not independent from politics or large companies in the sectoral markets. In addition, as characteristic of Eastern Europe, there are constitutional concerns about them breaking the principle of division of powers in a state. Namely, independent regulators often have – beside regulatory – also supervisory and licensing competences (Koprić et al., 2012/13: 27). Furthermore, the delegation of tasks and privatization in the framework of NPM, Neo-Weberianism

and good governance theories, lead to new forms of democratic accountability (Eymeri-Douzans & Pierre, 2011: 80, 120–149).

The main argument put forward within PAR is that agencification, by delegating authority from state bodies to regulatory agencies, guarantees independence and autonomy from politics of the day and ensures higher efficiency due to professional standards. The sectoral policies in question are most often – in Slovenia and the region alike – public finances and services of general interest (e.g. market security, insurance supervision, energy, telecommunication and post, transport, food safety, education, etc.). However, due to democratic deficit in case of such "technical" agencies, control is crucial to establish their accountability. Control mechanism should range from parliamentary and governmental (representative) control to general public supervision (cf. Rose-Ackerman & Lindseth, 2011: 516).

A theoretical and comparative literature overview shows that the development of an efficient PA in the sense of agencification is both a tool and a target by which and toward which the state can transform its PA. Such an approach can lead to good governance, combining bureaucracy and democracy toward result-based legitimacy (Eymeri-Douzans & Pierre, 2011: 8, 109). Political (vertical) and citizens (diagonal) accountability are in consequence inevitable major elements of evaluation of agencification goals' implementation, in both functional and organizational dimensions of PA reform. In this respect, following Pollitt & Bouckaert (2004, 2011), there are crucial differences between individual countries pursuing PAR that relate, as enlightened in this research, to structural organization of PA on the national level and the minister-to-mandarin relations.

### 3 Results of the Analysis of Agencification and Agencies' Structural Autonomy in Slovenia

#### 3.1 Methodology on structural and other goals and effects of agencification

Since no study on the impact of agencies' autonomy in relation to agencification elaborated as a consistent part of PAR has been found in literature (see Chapter 2), the research in this respect was initiated in 2013 as an upgrade of previous studies carried out in the region in 2011–2012. The purpose was to gain new information and knowledge in an interdisciplinary context. The research design is based on theoretical framework, mainly following Pollitt & Bouckaert's categorization of Neo-Weberian mode in PA. Taking into account the complexity of the field and the lack of quantitative data, the research methods applied were mainly qualitative ones, from descriptive analysis to semi-structured interviews. Selected comparative insights of agencification in (Eastern and broader) Europe were applied as much as possible as a complementary method. In terms of selecting variables,

PAR documents represented the independent variable while the agencies' autonomy represented the dependent one. The research explored the influence of PAR elaboration of agencification on the agencies' organizational and managerial autonomy.

In empirical terms, the official Slovenian PAR documents adopted between 1996 and 2014 were analyzed first. In this part an analysis of the declaratory goals of agencification in several PAR documents (strategies and umbrella legislation) over the last two decades was carried out. Since Slovenia has been a member of the EU since 2004, the influence of the EU is discussed as well. As indicated in Table 3, all PAR strategies and umbrella legislation adopted since 1991 were included. Documents were analyzed regardless of the level of policy maker (parliament or government), left or right wing oriented issuer, or phase of elaboration (draft or adopted) – as long as they were cross-sectoral and nationally driven. Data with regard to the level of emergence and realization of agencies' dimension in PAR documents (Table 3) were analyzed using different scientific and comparative studies (such as Kovač & Virant, 2011, Pevcin et al., 2012, Verhoest et al., 2012, Vintar et al., 2013, UNAID, 2013).

In order to assess the actual effects of agencification, particularly in structural dimensions compared to the ones declared in strategic documents, normative and statistical analyses were carried out among all 16 state public agencies, with additional interview-based research. Field legislation and quantitative data from the agencies' annual reports with statistics for 2011–2013 were analyzed to evaluate the organizational and managerial autonomy and efficiency of agencies.

To verify the assessments, follow-up interviews were conducted among representatives of seven public agencies and a control group of representatives of (most) corresponding ministries, covering the sectors of finances, economy, transport, science and education. Only top managers were included to offer strategic perspectives, namely directors of the agencies and state secretaries or directors general at the ministries. Such model enables further research and evidence-based decision-making in the field of agencification as a crucial PAR process at the national level and comparatively (as partially already conducted in SEE, cf. Koprić et al., 2012/13).

The interviews included questions and data gathering in relation to the agencies' autonomy from politics and, in particular, line ministries in their daily work, with special emphasis on organizational forms, HR and finance management, and professionalism. Additionally, control questions on the efficiency of agencies were asked. The said aspects (forms of autonomy, professionalism and efficiency) were emphasized as the primary goals of agencies' establishment. The data indicated in Table 5 were analyzed combining objective indicators and subjective experts' opinions on structural and partially functional autonomy (upgrading an earlier study of 2012, cf. Pevcin et al., 2012: 172). The following objective indicators were selected:

1. stability of agency in terms of tradition – longer existence, higher A–D grade (Table 5, column 3);
2. legal independence, i.e. the legally defined personality of the agency outside the line ministry – the more regulated and emphasized organizational independence in relation to the parent ministry and the government, the higher A–D grade (Table 5, columns 4 and 5);
3. statistical data on HR and finances – the less influence of the ministries on employment, the larger the size of personnel and its expertise, and more funds not only from the state budget but also from the agencies' own fees, the higher A–D grade (Table 5, columns 6 and 7).

In addition, a complementary subjective evaluation by the interviewees was required to verify the relevance of selected objective indicators (from agencies' annual reports) for final assessment.

The study is of course subject to some limitations. Although including different ministerial sectors and field agencies in interviews, the results could vary if all agencies and line ministries were covered (the interviews focused on selected agencies and corresponding ministries since they represent a legitimate majority in terms of the type, sector and number of agencies in Slovenia). Furthermore, some managers in top positions declined cooperation (being subjected to political will of new appointments in short time or similar). Finally, there had been so many changes in recent years that it would have been difficult to objectively evaluate the current situation. Given the methodology applied with due consideration of Slovenia's specifics, the results are valid within the region only. In future, a similar research could be designed and applied at least in the context of Eastern Europe. This would allow academia to gather comparable data and grasp new scientific findings to form professional recommendations for politicians on how to design better PAR.

### 3.2 Analysis of the agencification process in Slovenia

The regulation of public agencies has always been one of the key EU-driven reform programs although they have not been carried out consistently (Vintar et al., 2013: 168). The new Slovenian State Administration Act, in combination with the Public Agencies Act (PAA), both in force since 2002, revised the system of governance in state administration. Pursuant to the PAA, a public agency is an independent legal entity, founded by the state or a municipality with the purpose of more efficient execution of administrative tasks or in case when constant political supervision over task implementation is not necessary or appropriate. Public agencies act as public authority holders, issuing secondary legislation and deciding in individual administrative cases on the basis and within the scope of sectoral laws (with acts; Kovač, 2006: 180, 266 and the following). The PAA regulates the establishment of an agency, its bodies (council and director), competencies, tasks and activities, supervision, relations

between the agency and its line ministry, relations with users, transparency standards, financing, etc.

The council consists of the members appointed by the founder and of the representatives of the users (from one third to one half). The employees in public agencies are considered civil servants, albeit only several chapters of the Civil Service Act are applicable to public agencies. Pursuant to sectoral laws, agency employees are mostly included in the common governmental personnel plan (Koprić et al., 2012/13: 19, cf. Kovač & Virant, 2011: 150), which is a government tool for limiting the resources of the agencies, too.

The figures for Slovenia indicate one regulatory agency established in 1994 and five in 2000, 16 in 2010 and 17 in 2012, with two less and one more in 2013. The number of employees in agencies varies significantly (from 3 to 250; total about 800 in 2013). The majority of agencies fall under the scope of the ministries of economy (five) and finance (four), some under the ministry of transport and some under non-commercial sectors of science, education, culture and health (some agencies fall under the supervision of two field ministries). There are several phases of agencification in Slovenia (Table 2), with some recent attempts toward slight de-agencification.

After 2000, the proliferation of public agencies can be observed in Slovenia as well as in the region. The processes of transition and accession to the EU led to a rapid increase in the number of agencies in CEE in order to implement new or reorganized functions of democratic state, market economy and EU member state (Hajnal et al., 2011: 160). In Slovenia, however, proliferation and then again de-agencification, characteristic of the second half of 2000s, was more moderate (cf. Musa & Koprić, 2011: 60 and the following, for Croatia with 75 statutory agencies, and UNAID, 2013: 78, for Serbia, counting app. 30 public agencies in 2013). The process of agencification in Slovenia intensified and is still progressing, especially with regard to the aspects of (personnel and financial) autonomy. In 2011, the Govern-

ment designed an explicit reform program regarding public agencies, institutions and funds as part of the general PAR. The analysis and measures to be taken according to the 2011 draft strategy were in accordance with theoretical, comparative and practical recommendations, especially the differentiation of public agencies into regulatory and general ones, the rationalization of organization, and program budgeting. In sum, the emergence of public agencies puts Slovenia – compared to global trends – within the ratio of 2:1 between executive and independent public agencies (cf. regional ratios in Verhoest et al., 2012: 20)

### 3.3 Agencies within PAR in Slovenia – declarative dimensions

A thorough analysis of the key strategic documents on PAR in Slovenia was carried out to study the goals and measures of reforms involving agencification and type 2 public agencies. However, these documents differ considerably in terms of scope, main objective/s and level of details. In addition to contextual and methodological differences, there are also obvious differences with regard to the question whether, how and to what extent PAR addresses the agencies (Table 3, cf. Vintar et al., 2013: 164). Based on theoretical and comparative knowledge on agencification as a crucial and inevitable part of PAR, such analysis offers an insight into political coherence and professional grounds of agencification or the lack thereof.

As for the agencification goals in Slovenian PAR strategic documents, mainly two (groups of) issues can be identified on declaratory or operational levels (Table 3):

1. Strive for apolitical and professional conduct of expertise-driven public tasks;
2. Efforts to rationalize PA and public expenditure as a whole, in absolute spending and more efficient working processes.

Table 2: No. of (public) agencies in Slovenia (type 2, national level) over time (source: own analysis)

<i>Years</i>	<i>No. of new agencies</i>	<i>In sum</i>
–2000 (1994–)	1	1
2000–2004	7	8
2005–2008	3	11
2009–2012	6	17
2012–2014	-2 (1 new, 1 abolished, 2 merged)	<b>16</b>

Table 3: Overall strategic documents on Slovenian administrative reforms (Sources: Kovač & Virant, 2011, Vintar et al., 2013, etc. & own descriptive analysis)

<i>Strategy (adopted)</i>	<i>Year of adoption &amp; issuer</i>	<i>Period</i>	<i>Agencies' elements</i>	<i>Realization in 2014</i>
<i>Strategy for EU Accession</i>	1996 Parliament (left-wing driven, but overall political consensus)	1997–99	Agencies foreseen systematically as a key holder of EU driven regulatory and in some cases executive tasks as set by special law	Mainly
<i>Umbrella laws (State PA, Agencies, Inspection, Wages, Civil Service, etc.)</i>	2002 Parliament (left wing-driven, but overall political consensus)	2000–03	Special umbrella law on (public) agencies, in compliance with systemic forms set by State Adm. Act, Civil Service Act, etc.	Almost fully in structural, <i>less in functional parts</i>
<i>Strategy on Further Development of the Slovenian Public Sector</i>	2003 Government (left)	(incl. 2000–) 2003–05	Pursuing implementation of key umbrella laws, incl. on agencies	Mainly, again prevailing in structural aspects
<i>Slovenia's Development Strategy</i>	2004 Governments (left & right)	2005–13	Agencies part of "efficient state" goals/activities, emphasized further need for agencies when PAA criteria met, role of control agencies and enhanced coordination	<i>Partly and rather declaratory</i>
<i>Exit (from economic crisis) Strategy</i>	2010 Government (left)	2010–13	Focus on increasing efficiency in reducing state budget burden	<i>Partly, and purely in individual agencies</i>
<i>*Draft – The Origins of Further Development and Organizational and Normative Regulation of the Public Sector</i>	2011 Government	2011–12	Detailed general and individual measures on agencies within PA as a whole	<i>Partly, as pursued prior and parallel to this document</i>
<i>Changed jurisdiction of ministries, agencies and funds &amp; State Adm. Act amendment</i>	2012 Government & Parliament (right wing majority)	2012–	Overall understanding of PA as a system, besides ministries and entities within them also public agencies (and funds and institutes), but only organizational restructuring	<i>Partly</i> (new government in power after few months)
<i>Origins for further PA development</i>	Government (left)	2014–20	None, only some points on efficiency of PA in general and on heterogeneous PA organizations	/ (!)

The two main goals – (1) professional, organizational and managerial autonomy and (2) efficiency – are stated in most strategic and supporting documents as well as in laws (State Administration Act, Art. 15, or PAA, Art. 4 and sectoral legislation). However, professionalization prevails in the first decade (mid-90's to 2004) and efficiency afterwards, particular after 2010. Nevertheless, despite coherent upgrading and an obvious implementation gap, there is in sum great analogy between the normative objectives of Slovenian strategies and legislation and the model of professional and managerial autonomy set by OECD (2002, see Table 4).

As indicated in Table 4, in certain elements Slovenian agencies seem to exceed the standardized autonomy required by OECD if one did not simultaneously identify (see the following sections) the implementation gap (cf. Polidano, 1999: 210, Virant & Kovač, 2011: 71–73, Pevcin et al., 2012: 166). The strategic and regulatory framework is therefore an important – yet, following comparative experiences, only one – element of agencification.

### 3.4 Agencification – implementation gaps in structure and functions

Coordination and policy coherence gaps may, in general and in transitional countries in particular, raise the question of political accountability, provoke robust political interventions, and undermine the level of autonomy and expertise, especially where a firm legal framework does not limit the influence of politics (Koprić et al., 2012/13: 40, cf. Laking, 2005: 8, 17). In consequence, the recent proliferation of agencies in those countries causes many new and enhances old problems of PA (cf. Verhoest et al., 2012: 23, UNAID, 2013: 5 and the following).

The biggest problem in the Slovenian agencification process and agencies' conduct, as indicated by the managers of some of the agencies involved in the research, is the lack of vision as to which public tasks should be delegated to autonomous agencies. Even the Europeanization process impact has been evident in sectoral legislation only. The insufficient expertise and formalistic approach of agencies and their parent ministries was accentuated by the interviewees in several aspects. Such a situation is partially a consequence of the transitional heritage, i.e. of the lack of professional public management and well-designed public policies (cf. the same for other EE countries in Koprić et al., 2012/13, UNAID 2013). However, all interviewees find expertise and professionalism to be the key bases of true agency autonomy, allowing them to act apolitically.

Hence rather surprisingly, empirical research proves that legal aspects are an important but insufficient condition to achieve the desired independence and political neutrality in praxis (cf. Koprić et al., 2012/13: 29). As stated in one interview: “The guarantees of independence of agencies in the PAA are rather formal” and lacking “independence guarantees”. Two major problems arise according to the in-

terviewees from both agencies and ministries. Firstly, there are non-systematic differences in the autonomy level in various types of organization. In fact, lower independence is detected in the entities that legally should be autonomous. The autonomy thereof is otherwise guaranteed in several aspects: organizational, legal, functional, procedural, financial, and in terms of personnel (Kovač & Virant, 2011: 70–73, Bugarič, 2004: 1394–1402). Secondly, there is a discrepancy between autonomy and responsibility. Furthermore, it was argued that there should be a clear distinction between regulatory agencies and other agencies connected to the ministries (cf. Government, 2011).

In order to get more tangible results, the level of autonomy in different theoretically recognized dimensions (organizational, legal, managerial, financial) was evaluated from A to D (A as the highest autonomy, see more in 3.1). All Slovenian public agencies operating in 2014 were examined. The results are indicated in Table 5.

The main criteria of autonomy were set based on the third research question, exploring the gap between declared goals – i.e. professional autonomy to enable efficiency – and the actual effects of agencification in this respect.

In sum, there is an evident gap between declared and actual autonomy and independence as defined in theory and field legislation with (say) A/B in the long run. However, the situation as such is not necessarily problematic as long as the most important aspects of autonomy comply with the goals set in strategies and laws. However, this is not the case since professional and managerial autonomy (i.e. the most crucial ones) are evaluated as the lowest. On the contrary, particularly legal aspects are quite fully realized, which is characteristic of post socialist countries following formal rather than substantive elements of reforms (cf. Dunn et al., 2006, Eymeri-Douzans & Pierre, 2011: 24, 184, Verhoest et al., 2012: 55). According to the interviewees from Slovenian parent ministries and agencies, there is a large implementation gap between the goals set in strategic PAR documents and umbrella legislation and real practices. Nevertheless, the following conclusion can be drawn: professionalism-based independence and autonomy (with anticipated improved efficiency) of the respective agencies are the goals to be researched and pursued further within systemic PAR.

## 4 Discussion

Gradually but distinctively, agencies have been introduced as an organizational form worldwide in order to develop, in particular, independent regulators and leaner execution of public services. The prevailing goal declared in strategic Slovenian documents and draft laws of the founding (new) public agencies was initially PAR. Such goal was set in 1996 to divide strategic policy-making from implementation (steering from rowing, see Schick in OECD, 2002: 41). The development of (type 2) agencies' autonomy was further grounded in Slovenia in the effort to achieve political neutrality and professionally-driven implementation of

Table 4: Agencification goals according to OECD and Slovenian PAR documents (source: Kovač & Virant, 2011: 69 & own analysis of PAR documents from Table 3, based on OECD, 2002: 15)

<b>Organizational &amp; functional aspects</b>		<b>OECD – governance, environment</b>	<b>OECD – managerial &amp; expertise autonomy</b>	<b>Slovenian PAR acts /implemented?</b>
<b>Agencification driving forces/goals</b>				
<b>1. Expert &amp; managerial autonomy</b>	a. Independence	recommended	requested/ no	requested/ <i>different, possible</i>
	b. Continuity	possible	requested/ possible	possible/ often
	c. Participation of civil society	possible	requested/ possible	possible/ <i>low</i>
	d. Participation of users, partnerships	possible	requested/ possible	requested/ moderate
<b>2. Efficiency</b>	a. Specialization, user orientation	requested	tpossible	requested/ moderate
	b. Managerial methods, management by results	requested	possible	requested/ <i>low</i>
	c. Loosened admin. & financial rules	possible	possible/ requested	requested/ <i>moderate only</i>

delegated public tasks (Kovač, 2006: 260 and the following). The relative independence from daily politics and short-term interests of the parties in power when carrying out regulatory and other agencies' functions was the goal intended to lead to higher efficiency of PA at the end of the day.

In Slovenia, type 2 public agencies were created largely from the already existing bodies within ministries (as next steps agencies, cf. Verhoest, 2012: 21). However, this process was not systematically conducted, since there are still a large number of executive (internal, semi-autonomous) agencies within the ministries (about 35 in 2014). Later on, partial measures were taken, from redefining parts of state administration as – at least with regard to their legal status – autonomous agencies on one hand, to merging several autonomous agencies into ministries in 2011 and 2012 on the other. There has been no functional analysis whatsoever of overlapping tasks or effects of agencification. It seems, at least in most areas, that restructuring is occurring outside the administration mainly to avoid the restrictive governmental policy on expenditure (cf. Vintar et al., 2013: 163, cf. the same for Croatia in Musa & Koprić, 2011: 68).

The proliferation of agencies in Slovenia was in such context a result of several typical factors, such as NPM – as opposed to traditional Weberian PA – favoring the separation of policy making from execution. Additionally, agencification is in place to deal with an increasing complexity

of public tasks calling for the establishment of expert forms of PA organizations. Obviously some agencies were driven by the process of the country becoming a full EU member. As indicated in Table 2, most agencies were established in the region during the Europeanization process, taking place in Slovenia around 2004. The idea of independent administrative institutions was closely linked to the privatization of (economic) public services to ensure coordination between general public and private interests.

But here the state still seeks for stabilization and professionalism of agencies as opposed to transitional politicization, considering that some agencies established in 2008 are now being abolished based on what is known as the 2012 government rationalization program (see Koprić et al., 2012/13: 39–41). One can claim the classical Weberian bureaucratic model to be outdated today, but some of its dimensions are still relevant (more in Pollitt & Bouckaert, 2011) – especially in developing a coherent PA system by decentralization and delegation to agencies. The neo-Weberian paradigm therefore serves as a basis for bureaucratic competency and for the stability and control of the state (Randma-Liiv, 2008: 12, cf. Pollitt & Bouckaert, 2004: 99–100).

In striving to overcome the system's dissonances with regard to agencies, the problem appears to be other than the law or the inconsistent strategies themselves.

Table 5: Analysis of national public agencies' autonomy (source: own research)

No	Agency and parent ministry	Since	Status/org.	Legal views	HRM	Finances	Overall autonomy
1	Security Market (ATVP*) / finances	A 1994	A	A	C	A	A
2	Insurance Supervision (AZN) / finances	A 2000	A	A	B	A	A
3	Energy (AGEN-RS) / economy	A 2001	A	B	C	B	B
4	Telecommunication, post (AKOS) / economy	A 2001	A	B	C	C	B
5	Public Records (AJPES) / finances	A 2002	B	A	C	C	B
6	Research (ARRS) / science	A 2003	B	A	A	C	B
7	Railway (AŽP) / transport	A 2003	B	C	A	B	B
8	Entrepreneurship, tourism, innovation, investment (SPIRIT) / economy	B 2004/5/ 2012	B	C	B	C	B
9	Medicines (JAZMP) / health	B 2006	B	C	C	B	B
10	Books (JAK) / culture, science	B 2008	B	C	C	C	C
11	Public Revision (ANR) / finances	C 2009	A	B	C	C	C
12	High Education Quality (NAKVIS) / education	C 2009	B/C	C	A	C	C
13	Traffic Security (AVP) / transport	C 2010	B	D	C	C	C
14	Civil Aviation (CAA) / transport	C 2010	B	C	C	C	C
15	Film Centre (SFC) / culture	C 2011	B	C	C	C	C
16	Competition Protection (JAVK) / economy	D 2013	A	A	A	C	B
	<b>Sum/Average</b>	<b>B-</b>	<b>A-</b>	<b>B-</b>	<b>C+</b>	<b>C-</b>	<b>B/C</b>

The key issue is the difficulty to redefine administrative (sub) function and structures in order to ensure proper implementation of the law or strategy. Moreover, several reform processes in Slovenia were a mere “window-dressing” copy of the Western patterns (more for Slovenia in Vintar et al., 2013: 152). Decision makers used them as a shortcut to achieve the (idealistic) level of economic and democratic progress opposed to the historical experience of these countries in the past 50 years. Consequently, some of the reforms were rejected in the implementation phase for not being in compliance with the Slovenian societal and administrative framework and culture.

On the other hand, one cannot deny the positive effects of PAR and agencification in EE, included merely for the sake of hitherto deficiencies. On the contrary, in EE as in Western Europe, the agency model of PA seems to be a future parallel system to state administration when downsizing the latter in circumstances of financial crisis (Vintar et al., 2013: 153, cf. rather vice versa experience in CEE in general in Hajnal, 2011: 164). However, as assumed at the beginning of the study, (more) systematic PAR elaboration with regard to agencification is in place in EE and Slovenia alike.

One of the key problems seems to be the lack of a systematic approach to agencification owing to non-coordinated governmental field policies. This is proven by various other methods, from analysis of PAR documents to academia evaluation of PAR results and interviewees' experience. Such is evident (in Slovenia) especially in agencies under the auspices of two parent ministries. The reason for that could be the legacy of post-socialism with only partially executed transition processes, hence lower level of democratization within the society in general (cf. Verhoest et al., 2012: 335). Comparatively, it can be concluded that the trajectory of agencification in CEE countries differs from the trajectory in Western European countries in several aspects, mainly with regard to agencies' proliferation, less variation in types of agencies (with the predominance of the less autonomous type 1 agency), and unstable situation due to recent processes in place (Van Thiel, 2011: 16–29, cf. Koprić et al., 2012/13: 40–41).

What raises particular concern in EE, however, is that certain governments refuse the measures designed by their differently oriented predecessors just for the sake of anti-stance or in total lack of awareness of the importance of agencification (as if ignoring the problem would resolve it), which has become particularly evident in the recent two to three years. Focusing on efficiency alone is particularly risky since several interdependent functional and structural goals of agencification are to be interlinked (cf. Government, 2010, 2012; Verhoest et al., 2012: 413). In this context, the governmental draft strategy of 2011 (as declared in the internal materials of over 200 pp.) stands out as a rare positive exception.

This strategy, which was not adopted due to early parliamentary elections, stated clear aims regarding agencies. It combined the rationalization of resources with democrat-

ic governance based on autonomy and professionalism. In more detail: the strategy set the goal of rationalization in the field of (public) agencies by at least 10% of management expenditure on the basis of improved performance and acquisition of market resources (up to 50%). Moreover, (public) agencies would be differentiated in terms of autonomy and appropriate resources maintained for independent regulators, while pure executive agencies would be transferred to ministries or contracted out (cf. Laking, 2005: 10–12, Kovač, 2006: 59, Bevir et al., 2011: 287).

Basically, the key measure seemed to be “program driven budgeting” according to the tasks of agencies instead of their status and organizational form (cf. Verhoest, et al., 2012: 340). Quite the opposite, several counterproductive measures led to decreased autonomy and efficiency in respective fields. Examples range from founding an agency only to abolish it a year after (e.g. the Public Procurement Agency), merging incompatible tasks and types of procedures within the same agency (such as entrepreneurship subsidies distribution and tourism development within SPIRIT), or redefining present agencies and funds only to reduce the number of delegated tasks holders (e.g. the planned merger of Medicines Agency, Institute of Public Health etc., see Government, 2012). Some scholars point out that frequent reorganization leads to lack of agencies' accountability, since the role of agencies' managers is increased beyond ministerial control (Lane, 1995: 188, Christensen & Lægrev, 2006: 133). However, also the side effects – such as technocracy – have to be identified to be overcome (see Koprić et al., 2012/13: 26, 41).

To conclude, a coherent strategic approach to agencification in general and in individual fields is required in order to strive for the basic goals of professional delivery of public tasks. An efficient administrative system is however achieved not only by input-output economy lenses but holistically, based on the attainment of public policies' goals and preservation of public interest (Lane, 1995: 3, Verhoest et al., 2012: 432).

How to control the agencies (steering) while at the same time leaving them a significant degree of autonomy for the apolitical and more efficient performance of their tasks is the key question of the agency model. This question arises in particular in type 2 i.e. autonomous (external) agencies outside ministries (see Christensen & Lægrev, 2006, 2011; and Verhoest et al., 2012). The agencies' autonomy is relative and can be intensified or reduced, but must not eventually annul the impact of democratically elected authorities and users. Otherwise, the principles of the rule of law and social state, and common (public) interest are affected.

Not surprisingly, good governance practice, which would replace direct politicization as a steering mechanism (reporting, performance management, appointments, coordination, transparency), is still in the nascent state in the region (Hajnal et al., 2011: 172, Koprić et al., 2012/13: 41, Vintar et al., 2013: 126).

Finally, to analyze PAR in terms of agencification, an interdisciplinary approach (cf. Raadschelders, 2011: 181, Peters & Pierre, 2005: 265) is of key importance. In complex social situations narrower measures are not sufficient to tackle wicked problems. PA is always a professional and indispensably holistic process, more than just auxiliary in its operations, enabling the running of the basic public policies adopted by others. PA is a social subsystem and a pillar of the administrative level of public governance in the sense of the implementation of institutional public policies (cf. Raadschelders, 2011: 12–41). PA is therefore not only a productive activity but necessarily a creative one (Kovač & Virant, 2011: 30). It contributes to the overall progress of society since its main characteristics include constancy, a systematic nature, and initiative.

One of the above wicked problems is the current economic crisis, strongly influencing the agencies' resources and eventually even their existence. Several interviewees stated that in this respect there was a possibility of capture problem, since Slovenia is a small state with a limited number of field experts, many of them with previous experience and expertise in the regulated market. Because of that, some former directors of the companies operating in the respective fields become members of the agencies' councils. Thus, they frequently act as representatives of particular interests rather than of public interest. Interviewees also reported that there was a need to exclude agency employees from the civil service and from the unified public remuneration system (cf. the same already by OECD, 2002, or Pollitt & Talbot, 2004). However, to introduce such measures, evidence-based analyses should first be conducted in order to enable precise and targeted action. An integrated subject of study and a combination of research methods that builds on the content and approaches of the disciplines that make up PA is of utmost support and necessity in these researches.

## 5 Conclusion

The modern state and its PA are supposed to ensure a democratic and sustainable development and an efficient delivery of public tasks. In this context, agencies represent the sum of the efforts toward an expertise-driven and efficient PAR, in both national and supranational frameworks. Hence, agencification as a process and a form of public organization is an inevitable part of modern PA. However, policy makers are to be held accountable for public policies' design and implementation, which requires a necessary review and evaluation of PAR measures and the effects thereof.

The answers to the research questions elaborated for the purpose of this study are the following. Firstly, in Slovenia there are several PAR strategies or umbrella laws adopted in the last two decades, addressing public agencies and their role in PA, but the notion of agencies is not coherent. Moreover, there is no evaluation model designed to review the implementation of agencification activities within PAR documents. Secondly, almost all PAR documents set basic goals

as acknowledged in theory and comparative analyses. Sometimes these goals are found under other titles but basically it is about enhancing organizational and managerial autonomy of public agencies in order to deliver public tasks more professionally and efficiently. The process of agencification in Slovenia was, owing to Europeanization in 2000–2004 and the efforts to overcome the economic crisis in place since 2008, rather intensive. The goals of agencification mainly included expertise as opposed to politically-driven, and efficacy-oriented public tasks implementation. At such declaratory levels, it can be concluded that Slovenian efforts comply with professionalism and efficiency pursued worldwide.

However, when evaluating the effect of implementation as analyzed under the third research question, an obvious gap can be detected. Namely, the structural changes achieved can only partially support the desired improvements. A functional renewal of PA is hence required, such as programming sectoral public policies and, accordingly, their funding. Structural elements, on the other hand, such as legal personality of public agencies and the still preserved control by the ministries, have their limits, as noted by the interviewees. This is a problem since further policies addressing complex societal (wicked) problems in the scope of PA have to be evidence-based if indeed optimal in the long run. One can only hope that, when searching for best practices abroad, Slovenia will follow such systematic approach in this cross-sectoral field.

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### Organizacijski in managerski izzivi reformiranja slovenskih javnih agencij

**Povzetek:** Agencije so ena ključnih sodobnih oblik javnih organizacij, ki se razvijajo po celem svetu v okviru reform, usmerjenih v povečanje strokovnosti in racionalizacije javne uprave (JU). Države ustanavljajo javne agencije in nanje prenašajo javne naloge, da bi dosegle strokovno utemeljene namesto politično vodenih javnih politik in posledično njihovo večjo učinkovitost. Članek v tem smislu obravnava najpomembnejše strateške reformne dokumente v Sloveniji glede agencifikacije, z analizo na to področje nanašajočih se ciljev, rezultatov in razkoraka pri izvajanju.

**Zasnova/metodologija/pristop:** Raziskava je posvečena preučevanju vladnega pristopa k agencifikaciji kot ključnega vidika reforme JU. Analizira (1) poglobljene strateške dokumente o reformah JU glede javnih agencij v Sloveniji od srede devetdesetih let in (2) zaznave o implementaciji strukturne in managerske avtonomije kot deklariranega cilja agencifikacije. Uporabljene so različne, dopolnjujoče se raziskovalne metode, vključno z deskriptivno analizo, regijskimi primerjavami, strukturiranimi intervjuji med predstavniki agencij in resornih ministrstev ter analizo izbranih statističnih podatkov.

**Rezultati:** Kot izkazano z različnimi metodami proučevanja, je bila hipoteza o pretežnem doseganju ciljev strateških dokumentov o reformah JU na področju doseganja strukturne oziroma organizacijske avtonomije agencij potrjena. Toda za višjo stopnjo in druge oblike avtonomije je v reformnih strategijah nujna bolj podrobna razdelava agencifikacije.

**Zaključek:** Profesionalizacija slovenskih agencij je še trajajoč proces, zato je posebej značilna področna implementacijske vrzeli. V bodoče je zato potrebna bolj dosledna reforma JU in agencifikacije kot preko sektorske politike. Le tako lahko dosežemo razvoj demokratične in učinkovite JU.

**Ključne besede:** reforme javne uprave; agencije; avtonomija; organizacija; management; Slovenija.

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