The influence of geographic distance and partner diversity on multi-partner alliance R&D project performance

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ABSTRACT:

The importance of understanding the effectiveness of public funded multipartner alliances has increased in the recent years. Especially in complex high-tech industries, such as the geo-information sector (Daniel & Davis, 2009; Raesfeld, Geurts & Jansen, 2012). The relationship between partner diversity and innovation performance in multipartner alliances has been highlighted by previous literature (Raesfeld, Geurts, Jansen, Boshuizen & Luttge, 2012; Schwartz, Pelgow, Fritsch & Günther 2012). This research defines partner variety by the organizational type and the degree to which members are connected within the R&D network. The suggested positive relationship is tested within the context of a public funded multipartner alliance in the geo-information sector. Additionally, the impact of geographic distance on multipartner alliance innovation performance is examined, which has not yet been tested in existing literature. The research is based on the database of the RGI (Ruimte voor Geo-Informatie). The results do not significantly support the hypothesized relationships but provide implications for multipartner alliances in order to determine the possible impact of geographical distance and partner variety.

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1 Introduction

Multi-partner alliances (MPAs) are groups of companies, universities, governmental institutions or other actors which connect and collaborate for a common goal (Dietrich, Eskerod, Dalcher, & Sandhawalia, 2010; Mishra, Chandrasekaran, & MacCormack, 2015). Literature also defines MPAs as multilateral alliances or strategic networks (Albers, Schweiger, & Gibb, 2015).

Successful multi-partner collaboration plays a key role in most industries in order to perform competitive (Berggren & Söderlund, 2008; Rodney, Turner, Ledwith, & Kelly, 2009). Sharing knowledge and resources with partners which share a similar goal is used to decrease resource scarcity or a lack of in-house competences (Dietrich et al., 2010; Walker et al., 2008). The demand for inter-firm project based collaboration is often present in industries, which are highly competitive and increasingly complex e.g. the high-technology industry (Daniel & Davis, 2009). For example, Raesfeld, Geurts and Jansen (2012) tested the network requirements for innovation for public funded R&D projects in the nanotechnology industry. The importance of partner diversity and social embeddedness within the R&D network is highlighted.

Another good example for an increasingly complex high-tech industry is the geo-information industry (Li & Shao, 2009). In the recent years the technological development increased the opportunity to collect geographical information and to use existing knowledge about geo-information more effectively. It allows combining expertise and resources in an easier and faster way. The rapid development of technological opportunities consequently requires strong R&D activities within the geo-information industry (Gould, Craglia, and Kuhn, 2008; Rambaldi, McCall & Weiner, 2006; Plessis & Niekerk, 2014; Rodionova, 2014).

Public funded MPA's are often created to improve the social welfare in the country. The RGI program in the Netherlands (2003-2009) was funded by the government, to improve the national infrastructure by combining knowledge and technological developments within the industry. The program was divided into several sub-projects, which had individual objectives but shared a common goal (End report RGI, 2009).

Project based collaboration offers the opportunity to reduce risks and financial efforts by shared investments and pooled expertise (Dietrich et al., 2010). Inter-organizational project teams benefit from a diverse composition of know-how and resources and common project outcome expectations. Combining diverse input intends to increases the knowledge and resource level for all members (Albers et al., 2015; Lindkvist, 2005). A project realized by multiple partners is therefore described as a knowledge collective which includes cross-disciplinary units with minimal overlapping knowledge base (Lindkvist, 2005; C. Phelps, Heidl, & Wadhwa, 2012). In addition, Meagher and Rogers (2004) investigate how network density and the diversity of network members affect the innovativeness of R&D networks. It is stated, that higher network density can improve the level of innovativeness if the network density is increased by relationships between members that share heterogeneous knowledge (Fritsch & Kauffeld-Monz, 2010; Meagher & Rogers, 2004).

In other words, adding members to an already existing R&D network or increasing the level of interrelationships between the existing participants, is mostly beneficial if diverse knowledge or resources are exchanged. If simply already existing knowledge or resources are added to the network, the benefits are most likely to be negligible. Thus, the relationships between network members, as well as the heterogeneous combination of members are intertwined in their effect on R&D performance (Meagher & Rogers, 2004; C. C. Phelps, 2010b; Wasserman & Faust, 1994).

Literature further describes that organizational variety affects MPA project innovation performance positively (Raesfeld, Geurts, Jansen, Boshuizen & Luttge, 2012; Schwartz, Pelgow, Fritsch & Günther 2012). Organizational variety refers to the type of organization of project partners and is one of several partner diversity characteristics. Companies, governmental institutes, R&D organizations or hospitals are examples for different organizational types (Oukes, Groen, Geurts & Raesfeld, 2017; Jiang, Tao & Santoro, 2010). However, the effect of organizational variety on the innovation project performance has not been tested in the context public funded projects that aim to improve the geo-information industry and national infrastructure.

In addition to the organizational variety, the relationships a project partner has within an R&D network can affect the project performance positively, since those relationships can increase the access to information and resources (Roijakkers & Hagedoorn, 2006; Dagnino, Levanti, Minà & Picone, 2015; Crespo, Suire & Vicente, 2015). The example of the RGI program, consisting of approximately one hundred subprojects, shows that some members participate in a high number of subprojects, which connects them with a high number of RGI partners. Others participate in a relatively small amount of sub-projects. It can be assumed that partners who have a high number of relationships within the RGI program provide beneficial input to a sub-project, compared to a partner, which has no additional connections within the RGI project. The degree, to which a project partner is connected within a collaboration network, can therefore be defined as an additional partner characteristic that can influence the project performance.

Geographic proximity of collaboration partners is outlined as an additional influence on project performance (Grubbs, 2000). Geographic proximity is assumed to have a positive impact on collaboration. Collaboration partners are described to build better relationships due to less cultural differences, easier exchange of physical resources and communication (Ganesan, Malter, & Rindfleisch, 2005; Vollenberg, Kenis & Raab, 2007). Current literature focuses on the effect geographic density has on collaboration partners. However, a research gap is found regarding the influence of geographic distance on the innovation performance of publicly funded MPA projects.

Therefore, this research will examine the effect of partner variety (in terms of the organizational type and the degree to which project members are connected) and the geographic distance on MPA project innovation

performance. The research will be based on the Dutch RGI (geo-information) project. The outcome can extend the already existing theory and knowledge about the relationship between partner variety on innovation performance but also close the research gap found in regards to the influence geographic proximity can have on the innovation performance of public funded MPA programs. Additionally, practical implication from the example of the RGI project can support future R&D projects in similar industries.

1.1 Derived research question:

The following research question is addressed in this research (see figure one):

What is the impact of geographic distance and partner diversity on multi-partner alliance R&D projects?

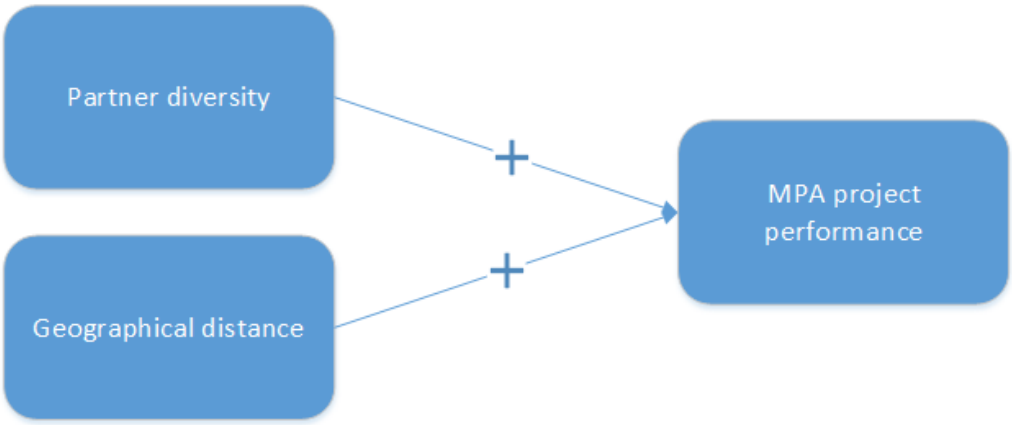

Figure 1-1: Proposed research model

2 Theory and hypotheses

2.1 Multipartner R&D Alliances

Literature has used a number of equivalences to describe alliances between two or more actors. The term multi-partner alliance (MPA) has been defined as "*a collective, voluntary organizational association that interactively engages its multiple members in multilateral value chain activities, such as collaborative research, development, sourcing, production, or marketing of technologies, products, or services*" (Lavie, Lechner, & Singh, 2007, p. 578).

Furthermore, it is defined as "*groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal*" (Provan & Kenis, 2008, p. 231). In addition, illustrated as "*a group of three or more organizations connected in ways that facilitate achievement of a common goal*" (Provan, Fish, & Sydow, 2007, p. 482).

According to the presented definition, MPA refers to a group of alliance members of different types (e.g. universities, firms or governmental institutes) that join together with the purpose of gaining access to external knowledge and resources for their individual advantage, but also serve a commonly agreed overall goal (Goyal & Moraga-Gonzalez, 2001; Von Zedtwitz & Gassmann, 2002).

It is described, that MPA's benefit from a multifaceted access to information, resources and expertise provided by its members (Oukes, Groen, Geurts & Raesfeld, 2017; Albers, Schweiger & Gibb, 2015). However, a high number of collaboration partners consequently complicates the management and coordination of the collaboration network (Castiglioni, Castro, González, 2015; Human & Provan, 2000). For example the management of conflicting interests such as competition for external market shares (Bengtsson & Kock, 1999; Bullinger, Neyer, Rass, & Moeslein, 2010). Multipartner alliances are therefore often only formed if governmentally supported. In other words, governments are founding MPA's by stimulating organizations to participate and thus increase social welfare (Sakakibara, 2002; Blind, 2016).

Literature does not provide extensive knowledge on governmental funded MPA effectiveness (Oukes, Groen, Geurts & Raesfeld, 2017; Beck, 2016). Research has mainly focused on the influence of project characteristics and member characteristics. However, there is an existing research gap in the context of national geo-information industry, which increased in the recent years in technological complexity.

2.1.1 Project based collaboration

This section provides a definition of collaboration, derived from existing literature. Existing literature defines collaboration as an activity that includes multiple entities contributing various resources, skills or knowledge to achieve a common or complementary goal (Walker, 2008). The motivation behind collaboration is often to gain benefits on both sides, which could not have been achieved independently (Dodgson, 1994; Narula, 2004). Dodgson (1994) describes these benefits as, increased scale and scope of activities, shared cost and risk, and an improved ability to deal with complexity. In addition, Mattessich and Monsey (1992) define collaboration as: "*a mutually beneficial and well-defined relationship agora into by two or more organizations to achieve common goals. The relationship includes a commitment to: a definition of mutual relationship and teak a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards*" (Mattessich & Monsey, 1992, p. 11).

Next to a general definition of collaboration existing literature offers a description of different types of relationships. Frey, Lohmeier, Lee, and Tollefson (2006) explain five stages of cooperation between two or more organizations, namely; networking, cooperation, coordination, coalition and collaboration. Here, the term collaboration is characterized by frequent communication and a mutual trust relationship. Decisions are mostly made based on an agreement between collaboration partners (Frey et al., 2006).

Moore and Skinner (2010) present the level of integration in regards to project based collaboration. Project based collaboration is characterized by resources and information exchange between members. In addition, the funding and policies for projects are shared. The relationship is limited to the scope of a shared project. However, the scope is often in case of positive experience extended and repeated in form of new projects (Keast, Glasby, & Brown, 2009; T. Moore, 2008).

Taking the above-described definitions of collaboration into consideration, it can be assumed that multi-partner alliance project based collaboration is often characterized by a shared goal in form of project objectives. In addition, resources, knowledge, financial efforts, funding's and risks are shared between members in the scope of the project duration (Todeva & Knoke, 2005).

This research will elaborate on the individual project performance within a MPA.

2.2 MPA project performance

An important criterion for governmental funded R&D projects is to keep the financial expensed within the project budget. Project success depends, next to the other performance criteria e.g. innovativeness or learning experience on the financial performance of the project. The financial performance is mostly evaluated as positive or successful if the project budget was not exceeded. Moreover, public R&D projects are mostly obligated to report all financial activities and provide full transparency on the financial spending (Ali-Yrkkö, 2004; Defazio, Lockett, Wright, 2009; Scherngell, Barber, 2011). Since the projects of the RGI are part of a governmental funded R&D program, the effect on project budget should not be neglected. The effect of each independent variable on the project budget compliance is therefore tested.

In addition to the financial performance, the innovation performance is of high importance in R&D projects. The innovation performance is often an important indicator for the R&D project output in form of desired project results e.g. new product or process development. The success of most R&D projects is therefore measured based on the innovative performance (Lin, Wu, Chang, Wang & Lee, 2012; Prajogo & Sohal, 2006; Artz, Hatfield & Cardinal, 2010).

In this research project performance is defined by the financial as well as innovation performance of the projects:

1. Finances: Did the project achieve valuable results compared to the financial efforts. And did the project stay within the project budget.

2. Innovative, valorization and embedded implementation of results and products

The measurement is further defined in the method section.

2.3 Partner diversity in MPA's

2.3.1 Organizational variety

Partner diversity refers to the diversity of members in a network defined by their e.g. organizational knowledge, cultural features and strategic objectives (C. C. Phelps, 2010a; Wasserman & Faust, 1994). Albers et al. (2015) define the compositional complexity of networks. It is mentioned that the level of compositional complexity depends on the number, the diversity and links between elements in a network. R&D alliances which include actors with heterogeneous internal information, skills and resources is described to improve the innovation performance of the network because combining diverse knowledge and increasing the overall information portfolio creates new opportunities for innovation. Hence, a minimal knowledge overlap and strong network ties is often desired between alliance partners (Lindkvist, 2005; Parkhe, Wasserman, & Ralston, 2006).

Previous literature defines partner variety in MPA's in three main categories; functional, organizational and industry variety (Oukes, Groen, Geurts & Raesfeld, 2017; Jiang, Tao & Santoro, 2010).

The functional variety refers to diverse functions of organizations e.g. marketing or R&D functions. A negative relationship between functional variety and organizational innovation output is suggested (Cui & O'Conner, 2012; Cáceres, Guzmán, Rekowski, 2011). Industry variety refers to different industries collaboration partners are active in, for example, the public utilities industry or the aerospace industry (Jiang, Tao & Santoro, 2010). Organizational variety refers to the type of organization of project partners The following are possible examples for different organizational types involves in MPAs: companies, universities, research and technology organizations or governmental institutions (Oukes, Groen, Geurts & Raesfeld, 2017; Jiang, Tao & Santoro, 2010; Sampson, 2007). Literature shows that organizational variety has a positive effect on MPA innovation performance (Raesfeld, Geurts & Jansen, 2012; Raesfeld, Geurts, Jansen, Boshuizen & Luttge, 2012). This research will focus on the organizational variety since literature stresses the increasing importance and positive effect on innovation performance.

In addition, organizational variety in R&D projects is expected to have a positive effect on the financial performance, since the costs for external knowledge and resources decreases. It is mentioned that the costs decrease due to increase of available knowledge and resources is also influenced by additional factors such as the absorptive capacity of the R&D project members (Combs, Liu, Hall & Ketchen, 2006; Koene, Vogelaar & Soeters, 2002; Jansen, van den Bosch & Volberda, 2006; George, Zahra, Wheatley & Khan, 2001).

This research fill focus on the organizational variety effect on innovation and financial project performance. Since strong evidence in previous research suggests a positive influence on project performance, which has not yet been tested within the geo-information sector.

Based on previous literature, the following hypotheses are tested in this research:

Hypothesis 1: Organizational variety has a positive effect on MPA project innovation performance

Hypothesis 1b: Organizational variety has a positive effect on MPA project financial performance

2.3.2 Degree of connectivity

In addition, literature highlights the importance of links or ties between the actors within a collaboration network (Fritsch & Kauffeld-Monz, 2010; Rulke & Galaskiewicz, 2000). A collaboration network is described as;

"*a set of people or groups each of which has connections of some kind to some or all of the others. In the language of social network analysis, the people or groups are called 'actors' and the connections 'ties.' Both actors and ties can be defined in different ways depending on the questions of interest. An actor might be a single person, a team, or a company. A tie might be a friendship between two people, a collaboration or common member between two teams, or a business relationship between companies*" (Newman, 2001, p. 1).

It is further mentioned that actors in R&D collaboration with a central position, or in other words are connected with a high number of collaboration partners, can improve their innovation performance (Meagher & Rogers, 2004). Tsai (2001) argues that networks can be compared to a social structure. A central network position with strong ties to other organization is strongly related to the innovation performance. In addition, the knowledge-based view points out that strong network ties support the development of new knowledge and to accumulate it (Grant, 2002; Kogut & Zander, 1992; Dagnino, Levanti, Minà & Picone, 2015; Crespo, Suire & Vicente, 2015). It can be assumed that not only the innovation performance of individual organizations can be supported by relationships within the R&D network but also the innovation performance of projects. For example, the relationships a project partner has within an R&D network can affect the project performance positively, since those relationships can increase the access to information and resources for the project (Roijakkers & Hagedoorn, 2006; Dagnino, Levanti, Minà & Picone, 2015; Crespo, Suire & Vicente, 2015). In addition, maintaining high amount of relationships within a R&D network can increase the costs for individual organizations but can have a positive effect on the financial performance of a R&D project, since costs for sourcing addition information and knowledge are decreased (George, Zahra & Wood, 2002; Dacin, Oliver & Roy, 2007; Elmuti, Abebe & Nicolosi, 2005).

Consequently, project partners who show a high degree of connectivity within a collaboration network are desirable for MPA projects. As explained above, most MPA members show diverse amount of relationships within the MPA. They are at minimal level connected to the partners which are involved in the same project, but might not be connected to the remaining MPA members. In contrast, other members show a high degree of connectivity within the MPA by participating in multiple projects.

The degree, to which a project partner is connected within a collaboration network, can therefore be defined as an additional partner characteristic that can influence project outcome.

Based on the argumentation presented above the following hypothesis is tested in this research:

Hypothesis 2: The degree of connectivity of project partners has a positive effect on MPA project innovation performance

Hypothesis 2b: The degree of connectivity of project partners has a positive effect on MPA project financial performance

2.4 Geographic distance

The spatial distance plays a key role in regards to collaboration and innovation performance. As described before, previous literature shows the positive relationship between geographical proximity and collaboration performance (Ojala & Tyrväinen, 2007). Collaboration partners which are located close to each other are described to build better relationships due to less cultural differences, easier exchange of physical resources and communication (Ganesan, Malter, & Rindfleisch, 2005). It also influences interpersonal relationships e.g. by supporting face-to-face meetings and shared understanding of the external environment (Breschi & Lissoni, 2006; Ganesan, Malter, & Rindfleisch, 2005). Hofstede (2003) presents the cultural dimensions; power distance, individualism versus collectivism, masculinity versus femininity and uncertainty avoidance index, which differ based on the geographical location. Further it is explained that the influence of geographic distance between R&D partners on national level can be significant, even when cultural differences are less extreme (Autant-Bernard et al., 2007; Jeffrey, distance on national level (Autant-Bernard et al., 2007; Okamuro, 2015). The effect of geographic distance (national or international) on collaboration performance is often evaluated by the performance of collaboration partners (Ganesan et al., 2005; Kafouros, 2008).

Literature argues that in contrast to the advantages of local clusters, the advantage of geographic proximity between collaboration partners decreases due to a more interconnected and globalized environment which simplifies sourcing external knowledge and resources outside local networks (Enkel et al., 2009; Kafouros, 2008; Petersen & Rajan, 2002). However, many studies show that geographic proximity has a positive on

collaboration performances despite the more globalized environment. A globalized environment can improve the access to external information and resources. But regional networks are described to not only support the sharing of resources but also improve the relationship and understanding between collaboration partners by e.g. knowledge spill-overs and shared regional R&D objectives (Boshuizen, Geurts & van der Veen, 2009; Rutten & Boekema, 2013; Terstriep & Lüthje, 2011). Furthermore, it geographic proximity is described to have a positive effect on the financial performance, since collaboration processes such as communication and information sharing are often more efficient (Olson, Walker, Ruekerf, & Bonnerd, 2001; Hutzschenreuter, Kleindienst & Lange, 2014; Ho, Wang & Vitell, 2012).

The perspective from project performance based view, shows a gap in existing literature. In other words, the advantages and disadvantages of choosing collaboration partners based on geographic proximity are often evaluated based on the innovation performance of collaborating companies or organizations. However, the influence of geographic closeness on national MPA project performance has been neglected.

Based on the positive influence of geographic closeness on innovation and financial performance, which is suggested by literature, the following hypothesis is tested in this research:

Hypothesis 3: Geographic proximity has a positive effect on MPA R&D project innovation performance.

Hypothesis 3b: Geographic proximity has a positive effect on MPA R&D project financial performance.

2.5 Overview of hypotheses:

The following hypotheses are tested based on a governmental-funded MPA projects:

Hypothesis 1a: Organizational variety has a positive effect on MPA project innovation performance

Hypothesis 1b: Organizational variety has a positive effect on MPA project financial performance

Hypothesis 2a: The degree of connectivity of project partners has a positive effect on MPA project innovation performance

Hypothesis 2b: The degree of connectivity of project partners has a positive effect on MPA project financial performance

Hypothesis 3a: Geographic proximity has a positive effect on MPA R&D project innovation performance

Hypothesis 3b: Geographic proximity has a positive effect on MPA R&D project financial performance.

Figure 2-1 visualizes the hypothesized relationships:

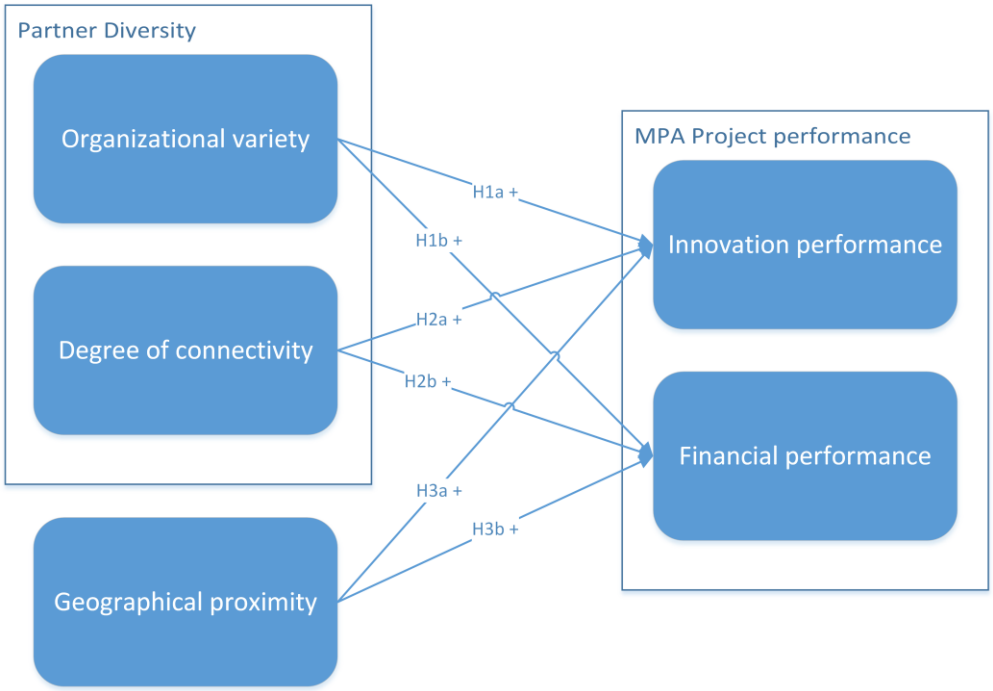

Figure 2-1 Visualization of hypothesized relationships

3 Methods

3.1 Sample and data sources

We tested the above-mentioned hypotheses based on the data collection of the Ruimte voor Geo-Informatie (RGI) project (2003-2009). The RGI end-report describes, the RGI project as part of the Besluit Subsidies Investeringen Kennisinfractstuur (BSIK) program, which is subsidized by the Dutch government to develop the national knowledge on geo-information and improve the country's infrastructure. The budget includes a total of 45.8 million euro of which 20 million euro are subsidized. Goal of the RGI project is to improve and innovate the geo-information infrastructure for a more efficient management of resources and support the industries involved. The RGI project consists of approximately 100 subprojects, which are divided into 5 categories namely, Openbare Orde en Veiligheid (public policy and security), Ruimtelijke Ordening en Inrichting (spatial planning and design), Consumenten en Leerlingen (consumers and apprentice), Nationale Geo-Informatie Infrastructuur (national geo-information infrastructure), Wetenschappelijk onderzoek (scientific research). Universities, network organizations, governmental organizations, R&D organizations and Dutch as well as a small number of international companies which are involved in geo-information or infrastructure participated. In total the RGI project counts approximately 250 participants, which are involved in one or more RGI, subprojects (End report RGI, 2009).

The database created by the RGI administration includes amongst other information, an overview of all project participants, an address list from its participants, information regarding the type of organization and standardized evaluation forms for most of the sub-projects. In order to test the influence of partner diversity and geographic distance (as defined above) on the project performance the data collection of the RGI project has been analyzed. A description of the variable measurement and a statistical analysis are outlined below.

3.2 Measures

In this section the measurement of the three variables used in this research are described. Namely: Project performance, geographic distance and partner diversity.

3.2.1 Dependent variable: Project performance

The RGI database provides evaluation scores for 68 out of 106 approved projects. One evaluation score was given by the adviesraad wetenschap (science advisory board). And one score assigned by the adviesraad gebruikers (user advisory board). The adviesraad wetenschap (ARW) initially assigned eleven people to review the project performance and assign scores. Due to unknown reasons two people did not submit any evaluation forms. In addition, one person filled in the evaluation form incorrectly (old format). Thus, the scores given by eight members of the ARW are valid. The Adviesraad gebruikers (ARG) assigned ten people for this task of which all submitted evaluation forms are correct.

Both, the ARG and ARW used identical evaluation forms. The form includes a score for ten performance criteria and a total score, which are listed in Appendix 7.4. Two of the ten performance criteria are selected for the performance analysis in this research:

3. Finances: Did the project achieve valuable results compared to the financial efforts. And did the project stay within the project budget.

4. Innovative, valorization and embedded implementation of results and products

The remaining eight criteria listed in (Appendix 7.4) as well as the overall score are not considered since they are not relevant in regards to the financial and innovation performance (e.g. international positioning).

The two selected performance criteria are rated on a scale from 1-4 (4= insufficient project performance; 3 = sufficient project performance; 2 = good to very good project performance; 1 = excellent project performance).

It is to mention that some projects did not receive a score for both performance criteria for several reasons (e.g. financial report not submitted by project members). Table 3-1 below summarizes the scores given for the innovation and financial performance by the ARW and the ARG:

	No. of finance scores submitted	No. of innovation scores submitted	No. of projects with a score for innovation and financial performance
ARW	52	59	49
ARG	64	62	58

Table 3-1: Total number of scores submitted by ARW and ARG

It is tested if the scores assigned to the two performance criteria are influenced by the person who performed the evaluation, as shown in Figure 3-1 to Figure 3-8.

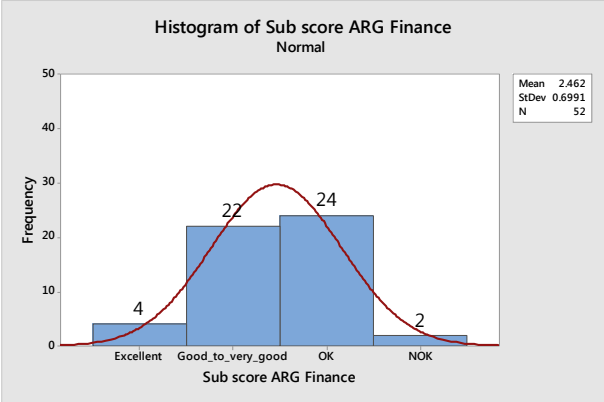

Figure 3-1: Distribution ARG finance score

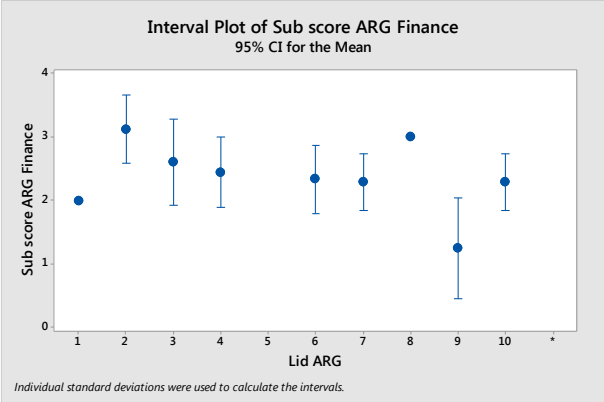

Figure 3-2: Score ARG rated by different board members

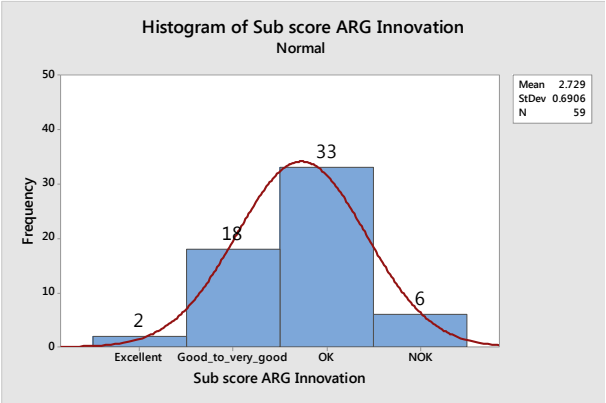

Figure 3-3: Distribution ARG innovation score

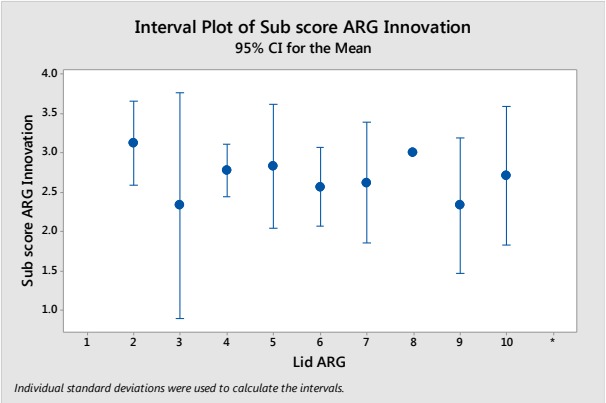

Figure 3-4: Score ARG rated by different board members

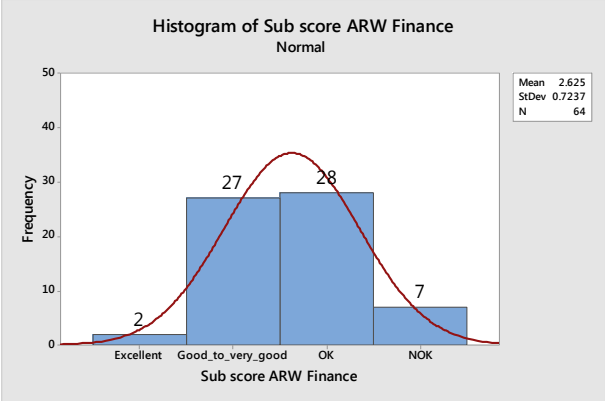

Figure 3-5: Distribution ARW finance score

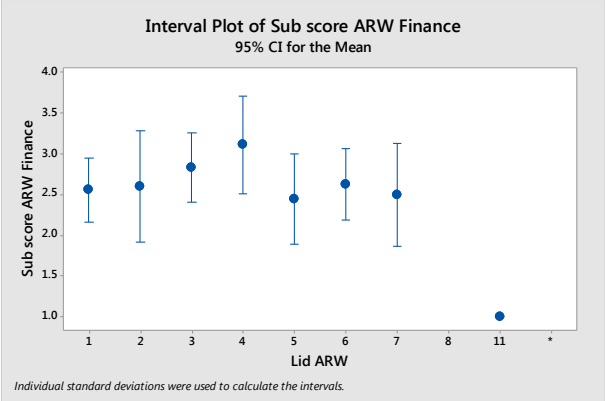

Figure 3-6: Score ARW rated by different board members

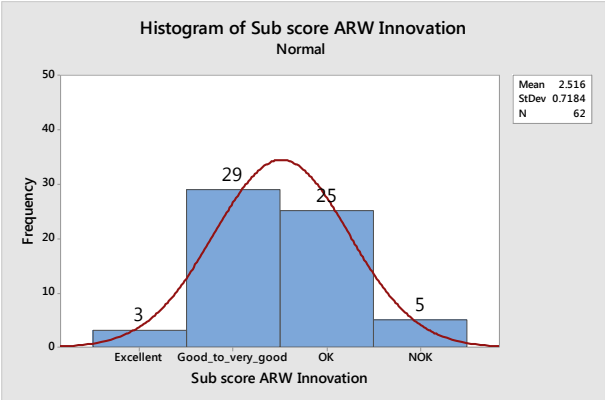

Figure 3-7: Distribution ARW innovation score

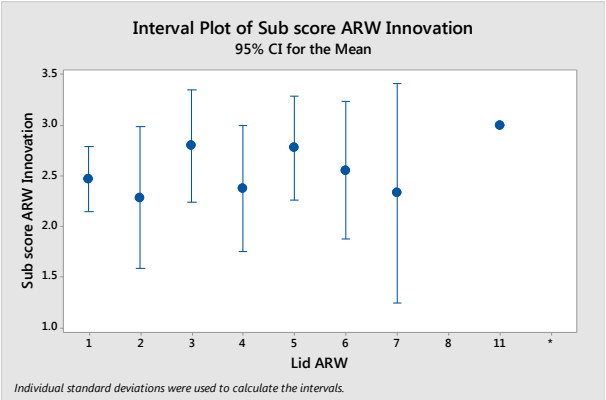

Figure 3-8: Score ARG rated by different board members

The scores given by the ARW and ARG in regards to the financial as well as innovation performance for all rated projects is presented. It can be observed, that both criteria are mostly rated with a score of good to very good or sufficient (OK) project performance. In addition, the interval plot showing the average score and 95% confidence interval for both criteria rated by different members of the ARG and ARW. It is observed that the confidence interval is overlapping and hence we can conclude that there is no correlation between the member rating the project and the score that is assigned to the performance criteria. In other words, we can assume that the member rating a project is not biased.

3.2.2 Independent variable: Geographic distance

The address for 273 RGI members (companies, universities and network organizations) in form of country, city, street name and house number is used in this research. The RGI database provides the address details for 242 out of 273 program members. The addresses which are not included in the database are added by obtaining the address details from the website of each member. In addition, no information was found which indicates that these organizations relocated in the time frame of the RGI program until 2018. Therefore, the assumption is made that the addresses used in this research reflect the addresses for all project members during the time of the RGI projects. In appendix 7.1 the addresses for all participants, including the information from where the address was retrieved, is provided. In the next step the addresses are converted into GPS coordinates. The application program interface from Google allows converting addresses into geographic coordinates (longitude and latitude). These variables are measured in degrees, minutes and seconds, which is also referred to as the DMS measurement. E.g. the coordinates for Esri Netherlands are: longitude: 51° 55' 24" latitude: 4° 28' 9". In addition, the location is described in degrees and decimal, the DD measurement. For example the value for the Esri Netherlands location is: 51.9233150,4.4691647.

After determining the GPS coordinates for each RGI member the distance between each member participating in the same project is calculated. To calculate the distance between two geographic locations in form of GPS coordinates, the inverse Vincenty method is applied, which is described as: "*compact formulae for the direct and inverse solutions of geodesics of any length. Existing formulae have been recast for efficient programming to conserve space and reduce execution time. The main feature of the new formulae is the use of nested equations for elliptic terms. Both solutions are iterative.*" (Vincenty, 1975, p.1).

The formula calculates the distance between points on an ellipsoidal surface in km with accuracy of 0.5 mm. Appendix 7.2 shows a detailed description of the formula. In the next step, the distances in km between each member in one project are summarized in a matrix. Figure 3-9 shows the distance matrix for RGI project 001.

Project 001	Bridgis BV	ESRI Nederland B.V.	Geodan Holding	MNP	TU Delft	VU Amsterdam	WUR
Bridgis BV		66	62	79	74	63	20
ESRI Nederland B.V.	66		56	20	11	53	83
Geodan Holding	62	56		49	53	3	65
MNP	79	20	49		9	46	93
TU Delft	74	11	53	9		50	89
VU Amsterdam	63	53	3	46	50		67
WUR	20	83	65	93	89	67	

Figure 3-9: Distance matrix of members of project 001 according to the Vincenty formula

As displayed in the table above, the distance between each project member is documented. The missing values in the diagonal are a result of a zero distance between an organization and itself. Next, the average distance between all project-members in one project is calculated, in order to assign one geographical distance value to each project. Since the RGI project did not assign project leaders, which present a geographical center between the participants, the average distance between all participants is assumed to be the more accurate. The measurement allows a comparison of the average distances between the 108 RGI projects. For example the average distance of RGI project 001 shown in Figure 3-9 is 53km.

3.2.3 Independent variable: Partner diversity

The partner diversity for each RGI project is defined by two partner characteristics. The first is the type of organizations participating in the project. The second is the degree of connectivity for the project. Below, a detailed description for both characteristics is provided:

a) Type of organization

The RGI database assigned each organization into one of the following categories:

1. Company
2. Governmental organization
3. University

4. R&D organization
5. Network organization
6. International organization

In order to assign a single comparable value to each RGI project Blau's index is used (Blau, 1977). The Blau index was composed by Simpson (1949) in order to measure the diversity of species represented in same environment. Blau's index is defined as $1 - \sum p_k^2$ with p being the proportion of each type of organization in a project. Values can range from 0 to (K – 1)/K with K being the possible number of types of organizations. When each type of organization is represented in a project K is equal to 6. If the amount of members per type of organization is evenly spread the maximum Blau's value of 0.83 is reached. The maximum is limited by K which means that when there are more categories available, there is a greater possibility for diversity.

For example RGI project 001 displayed in Figure 3-10, consist of 3 companies, 1 governmental organization and 3 universities. Blau's index is calculated as $\left[1 - \left(\left(\frac{3}{7}\right)^2 + \left(\frac{1}{7}\right)^2 + \left(\frac{3}{7}\right)^2\right)\right]$ and is equal to 0.61.

This method is applied to all RGI projects, which allows a comparison of the organizational variety in each project. The lowest value is zero which indicates that only one type of the six possible types is represented in the project. The highest value is 0.83 which indicates that all six types of organization are equally represented.

b) Degree of connectivity

The RGI database shows which MPA members participates in which project. A project connection is created when at least one member participates in another RGI project. In other words, if company A is participating in project 001 and 002; the project partners connect the projects. This is based on the assumption, that a member participating in two or more projects can share the knowledge, competences or resources gained in each project. For example if company A participates in project 001 and 002 it is likely that the knowledge obtained in project 001 can be used to support the project 002 and vice versa.

The degree of connectivity is calculated as the unique number connections divided by the number of maximum possibilities (Bettstetter, 2002). In other words, the total number of connections with other projects is determined (e.g. 64 links in project 001). Then only the unique connections are selected, to not include connections to the same project multiple times (e.g. 41 unique links in project 001). The maximum number of possibilities equals the total number of RGI projects minus one, since the project cannot be connected to itself. The degree of connectivity can then be calculated by dividing the unique number of connections by the total number of RGI projects minus one (e.g. 0.39 degree of connectivity for project 001).

The lowest possible degree of connectivity is zero, which indicates no connection to other projects. The highest possible degree of connectivity is one which indicates a link to every project within the RGI network.

Figure 3-10 and Figure 3-11 summarize the data for RGI project 001. Figure 3-10 displays the type of organization for each project member and the total number of projects the member participated in. Figure 3-11 presents the value for the organizational variety (Blau's index) and the value for the degree of connectivity for RGI project 001.

Project	Company	Type of company	Participation in other projects
001	Bridgis BV	Company	3
001	ESRI Nederland B.V.	Company	9
001	Geodan Holding	Company	4
001	Milieu en NatuurPlanbureau (MNP) voormalig onderdeel van RIVM	Government	5
001	Technische Universiteit Delft (TU Delft)	University	18
001	Vrije Universiteit van Amsterdam, Spinlab	University	8
001	WUR (Wageningen UR, WU, DLO)	University	17

Figure 3-10: Type of organization and connections with other projects in RGI project 001

Project	Blau's index	Unique number of links	Degree of connectivity
001	0.61	41	0.39

Figure 3-11: Blau's Index and Degree of connectivity RGI project 001

3.2.4 Control variable

As control variable the number of project members is included in the data analysis. The number of project members can increase the chance for higher variety in terms of type of organization and number of connections to other projects (degree of connectivity). The number of project members is retrieved from the data set of the RGI program.

3.3 Data analysis

Based on the variables described in the section above, the statistical method ordinal logistic regression is applied. The statistical analysis was performed in SPSS version 25 (IBM Corp., Armonk, NY, U.S.). This method can be used to describe the relationship between one or more predictors (independent variables) and one response (dependent variable). The requirement to apply this method is the type of variables used. The

independent predictor variables are required to be of either categorical or continuous nature. The dependent variable is defined as ordinal measurement with an order (Harrell, 2001).

Given the conceptual model tested in this research, the predictor variables are defined as the average geographical distance between each member in one project in kilometer and the partner diversity defined as (a) organizational variety (Blau's index) and (b) degree of connectivity. Since each of the three predictor values are of quantitative nature, the requirement is fulfilled. Moreover, the response variable in terms of project performance measurement (score ARW and ARG) is defined as ordinal values and rated on a scale from 1-4(excellent to insufficient). The assumption of proportional odds is tested by running the test of parallel lines. It can be observed from Table 3-2 that the p-value is greater than 0.05 and therefore also meets the requirement for an ordinal logistic regression.

Table 3-2: Results of the test of parallel lines for both ARW and ARG score for the three predictor variables and control variable.

	-2 Log Likelihood	*Chi-square*	*p-value*
Score ARW	116.97	2.60	0.96
Score ARG	111.64	7.48	0.49

The next requirement is that there is no severe correlation amongst the predictors. Hence, there is no multicollinearity between the dependent variables. It can be observed in Table 3-3 that there is a slight correlation between the organizational type and the degree of connectivity. However, as can be observed in Table 3-4 the variance influence factor is lower than 2.5 and therefore it is concluded that there is no severe multicollinearity.

Table 3-3: Means, standard deviations and correlations

		Mean	*S.D.*	*1*	*2*	*3*	*4*
1	Average geographical distance	293.4	1248.1	1.00			
2	Member diversity	0.431	0.282	-0.07	1.00		
3	Degree of connectivity	0.150	0.139	0.11	0.62***	1.00	
4	Number of project members	4.741	3.767	-0.03	0.67***	0.66***	1.00

*p≤0.05, **p≤0.01, ***p≤0.001

The model is evaluated based on the p-value of the goodness-of-fit test. The model is significant if the p-value is smaller than 5%.

Table 3-4: Variance influence factor analysis on dependent variables

Model	*VIF*
Average geographical distance	1.09
Member diversity	2.21
Degree of connectivity	2.33
Number of project members	2.45

4 Results

In Table 3-3 the means, standard deviations and correlations for all variables are presented. In Table 4-1 and Table 4-2 present the results of the ordinal logistic regression model testing the hypothesized effect on financial performance, for both ARG and ARW evaluations. Similarly in Table 4-3 and Table 4-4 the results are shown to test the hypothesized effect on innovation performance. The hypotheses are tested after controlling for the number of project members. The effects on the dependent variables are small and considered as not significant. Note, that the scores are rated from 1, being excellent, to 4, being insufficient. In other words, a negative correlation has a positive effect on the performance rating.

In H1a, it is proposed that the organizational variety has a positive effect (negative correlation) on the project innovation performance. Table 4-3 and Table 4-4 show that the correlation between organizational variety and project innovation performance is negative. The hypothesis is therefore present but is insignificant. Thus, H1a is rejected.

In H1b, it is proposed that the organizational variety has an effect on the project financial performance. Table 4-1 and Table 4-2 show that the correlation between organizational variety on the financial performance is negative (positive effect) yet insignificant. Thus, H1b is rejected.

In H2a, it is proposed that the degree of connectivity has a positive effect (negative correlation) on the project innovation performance. Table 4-3 show that and Table 4-4 show that the relationship between the degree of connectivity and innovation performance is negative yet insignificant. Thus, H2a is rejected.

In H2b, it is proposed that the degree of connectivity has an effect on the project financial performance. Further, Table 4-1 shows that the relationship between the degree of connectivity and the financial performance is positive (negative effect) yet insignificant. Thus, H2b is rejected;

In H3a, it is proposed that the geographical distance has a negative effect on the project innovation performance (lower geographical distance shows better innovation rating). Table 4-3 shows that the

relationship between geographical distance and innovation performance is positive (negative effect). The coefficient is 0.0005 with an odds ratio of 1.00, 95% CI [1.00 to 1.00]. Similarly, Table 4-4 shows that geographical distance is positive yet insignificant. Thus, H3a is rejected.

In H3b, it is proposed that geographical distance has an effect on the project financial performance. Table 4-1 and Table 4-2 show that the relationship between geographical distance and financial performance is positive (negative effect) yet insignificant. Thus, H3b is rejected.

	Model 1			*Model 2*		
	B	*S.E.*	*Sig.*	*B*	*S.E.*	*Sig.*
Number of project members	-0.04	0.07	0.62	0.03	0.10	0.77
Average distance				0.00	0.00	0.38
Member diversity				-1.99	1.33	0.14
Degree of connectivity				1.63	2.59	0.53

Table 4-1: Determinants of ARW finance performance rating in multipartner alliances. Notes: Model 1, χ(1)=0.27,p=0.60, N=64, Nagelkerke R2=0.00; Model 2, χ(4)=4.12,p=0.39, N=64, Nagelkerke R2=0.07

	Model 1			*Model 2*		
	B	*S.E.*	*Sig.*	*B*	*S.E.*	*Sig.*
Number of project members	-0.03	0.07	0.71	0.05	0.12	0.68
Average distance				0.00	0.00	0.54
Member diversity				-0.92	1.50	0.54
Degree of connectivity				-0.92	2.98	0.76

Table 4-2: Determinants of ARG finance performance rating in multipartner alliances. Notes: Model 1, χ(1)=0.16,p=0.69, N=52, Nagelkerke R2=0.00; Model 2, χ(4)=1.46,p=0.83, N=52, Nagelkerke R2=0.03

	Model 1			*Model 2*		
	B	*S.E.*	*Sig.*	*B*	*S.E.*	*Sig.*
Number of project members	0.08	0.07	0.25	0.26	0.11	0.02
Average distance				0.00	0.00	0.01
Member diversity				-0.46	1.36	0.74
Degree of connectivity				-5.27	2.84	0.06

Table 4-3: Determinants of ARW innovation performance rating in multipartner alliances. Notes: Model 1, χ(1)=1.43,p=0.23, N=62, Nagelkerke R2=0.03; Model 2, χ(4)=12.90,p=0.01, N=62, Nagelkerke R2=0.20

	Model 1			*Model 2*		
	B	*S.E.*	*Sig.*	*B*	*S.E.*	*Sig.*
Number of project members	0.09	0.07	0.21	0.23	0.12	0.05
Average distance				0.00	0.00	0.31
Member diversity				-0.70	1.47	0.63
Degree of connectivity				-3.20	2.83	0.26

Table 4-4: Determinants of ARG innovation performance rating in multipartner alliances. Notes: Model 1, χ(1)=1.66,p=0.20, N=59, Nagelkerke R2=0.03; Model 2, χ(4)=4.51,p=0.34, N=59, Nagelkerke R2=0.07

5 Conclusion

5.1 Implications

This research tested the influence of geographical distance and partner diversity on the project performance of government funded MPA projects. It can be stated, that the model can find support based on existing literature. However, tested within the scope and database of the RGI program (2007-2011) the model does not show significance between the hypothesized relationships. ‘

The results show that there is no significant difference between the performance evaluation of the user advisory board (ARG) and the science advisory board (ARW).

The reason for the insignificantly tested relationship between geographical distance and the project performance can be caused by the fact that the direct effect of in terms of knowledge spill-overs and relationship improvements might not have been sufficiently reflected in the project performance evaluation. The database of the RGI does not provide any insight on the type of communication, way of exchange of knowledge and resources or the relationship between project partners. Since the advantages of geographical distance are often characterized by improved communication and knowledge spill-overs between project partners, the results of this research do not exclude a positive influence of small geographical distance on the project outcome (Ganesan, Malter, & Rindfleisch, 2005). The implication for national MPA’s is to measure the impact of geographic proximity differently, for example by examining the relationship between project partners. In other words, the geographic proximity might have influenced the project outcome positively but the project evaluation was not detailed enough to capture the positive effect.

In regards to the not supported relationship between organizational variety and project performance it can be stated, that the RGI database did not provide sufficient information in regards to the input each project member delivered. In other words, a high organizational variety might have been measured, while only a minor contribution from several organizational types was given. The project performance measured would therefore not reflect the input of the measured organizational variety. The managerial implication is that a positive effect between organizational variety and innovation output is still to be expected, based on previous research (Raesfeld, Geurts & Jansen, 2012; Raesfeld, Geurts, Jansen, Boshuizen & Luttge, 2012). However, in order to determine the effect MPA’s should report the input and participation of individual project participants. In addition, a detailed documentation within MPA’s in regards to member characteristics can support the determination of the effect partner variety can have on MPA project performance.

The degree of connectivity is defined by the participation of project partners in other MPA projects. However, no further structured information in regards to the role of each member in these projects is provided in the RGI database. In other words, a project partner might participate in a high number of other

projects, but takes a relatively inactive role in other projects. The assumed overlap and exchange of information might not exist. An implication for MPA's is to define the roles of project members clearly and communicate the participation of all members in each project within the MPA.

5.2 Limitations and Future research

This research is based on the data base of the RGI program. The database does not provide a performance evaluation for each project, but for 67 out of 108 projects. The projects analyzed show very similar evaluation scores from both advisory boards (research and user advisory board). Almost all projects have been rated with a very similar score. Comparing the influence of partner characteristics as well as the geographical distance on project performance requires both negative and positive project performance scores. In other words, the data which is used to compare project performances based on diverse circumstances should ideally have a wide variety of performance outcomes. In addition, the evaluation of both advisory boards is presented lacks transparency and can assumed to be subjectively. The rating is given based on a scale from one to four. However, the reasoning for the assigned score is limited. Only a few evaluation forms include a qualitative assessment of the reasoning for the assigned performance score.

Moreover, a limitation is given due to the evaluation of only publicly funded MPA projects. Schwartz, Pelgow, Fritsch and Günther (2012) describe that public funded projects are often selected carefully before receiving funding. Therefore, the results which include almost no insufficient performance outcome might be a result of the preselection of projects (Jaffe & Lerner, 2001). This assumption is supported by the end report of the RGI program, which describes the rejection of several project proposals which did not meet the RGI requirements. Furthermore, this research does not take any network structures e.g. the power asymmetry within the MPA into consideration. Literature for example suggests that power asymmetry can influence the relationship between partner variety and innovation in form of new product development (Oukes, Groen, Geurts & Raesfeld, 2017). In addition, it can be stated, that not all types of partner variety have been considered in this research. For example the functional and industry variety are not considered (Jiang, Tao & Santoro, 2010.

Future research can be conducted in regards to proposed relationship model in this research, since the results do not exclude the hypothesized correlations and the practical and theoretical relevance remains.

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7 Appendix

7.1 Address list

Company	Address	Retrieved from	Longitude	Latitude
ADVIN regio Zuid oost	Wethouder van Eschstraat 44, Oss, Nederland	RGI database	51° 45' 46"	5° 31' 40"
Aerodata International Surveys BVBA	Luchthavenlei 7A b10, Deurne, België	RGI database	51° 11' 28"	4° 27' 2"
Afvalcombinatie de Vallei Gemeenten BV. (ACV)	Neonstraat 4, Ede, Nederland	RGI database	52° 2' 35"	5° 36' 58"
Agroportal B.V.	Pascallaan 70, Lelystad, Nederland	RGI database	52° 28' 25"	5° 29' 31"
Agrovision B.V.	Teugseweg 18, Deventer, Nederland	RGI database	52° 14' 17"	6° 10' 12"
Anaximander v.o.f.	Kwartiermeesterstraat 3, Amsterdam, Nederland	RGI database	52° 22' 18"	4° 56' 35"
Andes BV	Fellenoord 310, Eindhoven, Nederland	RGI database	51° 26' 34"	5° 28' 22"
ANWB	Wassenaarseweg 220, Den Haag, Nederland	RGI database	52° 5' 50"	4° 19' 43"
Aquagis B.V.	Hanzelaan 270, Zwolle, Nederland	RGI database	52° 30' 13"	6° 5' 32"
Arcadis	Mercatorplein 1, 5223 LL 's-Hertogenbosch	company website	51° 41' 24"	5° 17' 21"
Arcadis Ruimtelijke Informatie	Het Rietveld 59a, Apeldoorn, Nederland	RGI database	52° 12' 48"	6° 0' 1"
ArcheoPro	Holdaal 6, Maastricht, Nederland	RGI database	50° 49' 24"	5° 43' 17"
Atilas Automatisering	Waterland 71, Emmeloord, Nederland	RGI database	52° 43' 39"	5° 45' 35"
Atlis Informatiesystemen BV	Kosterijland 78, Bunnik, Nederland	RGI database	52° 3' 39"	5° 12' 32"
B & F Ybema Beheer BV	Govert Flinckplantsoen 26, 1701 NH Heerhugowaard	company website	52° 40' 39"	4° 51' 24"
Bentley Systems Netherlands B.V.	Bijenstraat 11, Culemborg, Nederland	RGI database	51° 56' 41"	5° 12' 50"
Bibliotheek Wageningen UR	Droevendaalsesteeg 2, Wageningen, Nederland	RGI database	51° 59' 7"	5° 39' 49"
BLGG BV (Bedrijfslaboratorium Grond en Gewas)	Mariëndaal 8, Oosterbeek, Nederland	RGI database	51° 59' 19"	5° 51' 45"
Brabant Water N.V.	Magistratenlaan 200, 5223 MA 's-Hertogenbosch	company website	51° 41' 18"	5° 17' 28"
Brandweer Nijmegen	Prof. Bellefroidstraat 11, Nijmegen, Nederland	RGI database	51° 49' 43"	5° 52' 1"
Bridgis BV	Walburgkerkpad 3, Tiel, Nederland	RGI database	51° 53' 13"	5° 25' 51"
Bunker8	Penningsveer 2, Haarlemmerliede, Nederland	RGI database	52° 23' 35"	4° 40' 39"
C.M. Kan Instituut voor onderwijs in de Geografie en Planologie	Nieuwe Prinsengracht 130, Amsterdam, Nederland	RGI database	52° 21' 51"	4° 54' 45"
Capgemini Nederland B.V.	Papendorpseweg 100, Utrecht, Nederland	RGI database	52° 3' 55"	5° 5' 24"
Cartografisch Vormgever Peter de Vries	Vredeshof 15, Middenbeemster, Nederland	RGI database	52° 32' 60"	4° 54' 59"
Cebra b.v.	Kronehoefstraat 66, Eindhoven, Nederland	RGI database	51° 27' 9"	5° 27' 59"
Centraal Bureau voor de Statistiek (CBS)	Prinses Beatrixlaan 427, Voorburg, Nederland	RGI database	52° 2' 28"	4° 18' 40"
City University London (England)	Northampton Square, London, Engeland	RGI database	51° 31' 38"	-1° 53' 53"
CityGis B.V.	Nassau Ouwerkerkstraat 3, Den Haag, Nederland	RGI database	52° 5' 26"	4° 18' 53"

CityWorks	, Den Haag, Nederland	RGI database	52° 3' 8"	4° 14' 11"
Codename Future Den Haag	Zeestraat 71, Den Haag, Nederland	RGI database	52° 5' 9"	4° 18' 9"
Consilience B.V.	Julianalaan 18, Hilversum, Nederland	RGI database	52° 13' 10"	5° 10' 45"
Covalent ITS B.V.	Ardennen 11, Leusden, Nederland	RGI database	52° 8' 1"	5° 25' 59"
CubeWerx Inc.	815 Boulevard de la Carrière #202, Gatineau, QC J8Y 6T4, Canada	company website	45° 27' 12"	-76° 16' 10"
Cyclomedia Technology B.V.	Achterweg 48, Waardenburg, Nederland	RGI database	51° 50' 0"	5° 14' 49"
Data Archiving and Networked Services (DANS)	Anna van Saksenlaan 51, Den Haag, Nederland	RGI database	52° 4' 51"	4° 20' 44"
Dataland	, Reeuwijk, Nederland	RGI database	52° 3' 21"	4° 43' 36"
De Digitale School (Digischool)	, Voorburg, Nederland	RGI database	52° 4' 21"	4° 20' 43"
De Twee Snoeken Bouwplantoets	Postelstraat 49, 5211 DX 's-Hertogenbosch	company website	51° 41' 18"	5° 18' 3"
De Vlinderstichting	Mennonietenweg 10, Wageningen, Nederland	RGI database	51° 57' 59"	5° 39' 20"
Deloitte Consulting B.V.	Orteliuslaan 1041, Utrecht, Nederland	RGI database	52° 3' 56"	5° 4' 59"
DHV	, Amersfoort, Nederland	RGI database	52° 11' 22"	5° 23' 46"
Dienst Landelijk Gebied (DLG)	Herman Gorterstraat 5, Utrecht, Nederland	RGI database	52° 5' 11"	5° 6' 52"
Dienst Regelingen (LNV)	Ln. Van Nieuw Oost Indië 131, Den Haag, Nederland	RGI database	52° 5' 5"	4° 20' 18"
dIMAGINE	Oranjestraat 68, Arnhem, Nederland	RGI database	51° 59' 4"	5° 52' 56"
DS Landschapsarchitecten	Overtoom 197, Amsterdam, Nederland	RGI database	52° 21' 41"	4° 52' 14"
EARS B.V. (Environmental Alalysis and Remote Sensing BV)	Kanaalweg 1, Delft, Nederland	RGI database	52° 0' 23"	4° 21' 49"
Ecorys Nederland BV	Watermanweg 44, Rotterdam, Nederland	RGI database	51° 57' 1"	4° 33' 31"
Educatieve Hogeschool van Amsterdam	H.J.E. Wenckebachweg 144-148, Amsterdam, Nederland	RGI database	52° 20' 10"	4° 55' 46"
Educatracks GPS-Activiteiten	De Waard 111, 1851 RC Heiloo	RGI database	52° 35' 32"	4° 42' 48"
Eijkelkamp Agrisearch Equipment BV	Nijverheidsstraat 30, Giesbeek, Nederland	RGI database	51° 59' 19"	6° 3' 19"
Envidat	Dortmunder Strasse 7, Lünen, Duitsland	RGI database	51° 36' 45"	7° 31' 8"
E-Producties	Vughterhage 72, Vught, Nederland	RGI database	51° 39' 41"	5° 17' 10"
Erasmus Universiteit (Rotterdam), faculteit sociale wetenschappen (FSW)	Burg. Oudlaan 50, Rotterdam, Nederland	RGI database	51° 55' 1"	4° 31' 32"
ESRI Nederland B.V.	Stationsplein 45, Rotterdam, Nederland	RGI database	51° 55' 24"	4° 28' 9"
Faculteit Aard en Levenswetenschappen, Vrije Universiteit	De Boelelaan 1085, Amsterdam, Nederland	RGI database	52° 19' 59"	4° 51' 54"
Falkplan BV	Fellenoord 310, Eindhoven, Nederland	RGI database	51° 26' 34"	5° 28' 22"
Floron	Toernooiveld 1, Nijmegen, Nederland	RGI database	51° 49' 25"	5° 52' 2"
Fontys Lerarenopleiding Tilburg	prof. Goossenslaan 1-01, Tilburg, Nederland	RGI database	51° 32' 21"	5° 4' 38"
Fryske Akademy	Doelestraat 8, Leeuwarden, Nederland	RGI database	53° 12' 13"	5° 47' 34"
Fugro-Inpark BV	Dillenburgsingel 69, Leidschendam, Nederland	RGI database	52° 5' 47"	4° 24' 22"
FutureWater	Gen. Foulkesweg 28, Wageningen, Nederland	RGI database	51° 58' 0"	5° 40' 15"
Galileo CommunicatieProjecten	Utrechtseweg 356, Doorwerth,	RGI database	51° 59' 15"	5° 48' 10"

	Nederland			
Games Factory On line.nl B.V.	Hanzeweg 14-j, Gouda, Nederland	RGI database	52° 1' 34"	4° 40' 52"
Gemeente Amersfoort	Stadhuisplein 1, Amersfoort, Nederland	RGI database	52° 9' 24"	5° 23' 3"
Gemeente Apeldoorn, afd. Ruimtelijke Informatie	Marktplein 1, 7311 LG Apeldoorn	company website	52° 12' 57"	5° 57' 50"
Gemeente Arnhem	Koningsstraat 38, Arnhem, Nederland	RGI database	51° 58' 46"	5° 54' 44"
Gemeente Eindhoven Dienst, DMO	, Eindhoven, Nederland	RGI database	51° 26' 8"	5° 28' 28"
Gemeente Groningen, Dienst RO/EZ	Zuiderdiep 98, Groningen, Nederland	RGI database	53° 12' 50"	6° 33' 55"
Gemeente Haarlem sector brandweer en Ambulance	Zijlweg 200, Haarlem, Nederland	RGI database	52° 23' 11"	4° 36' 60"
Gemeente Helmond	Weg op Den Heuvel 35, 5701 NV Helmond	company website	51° 28' 36"	5° 39' 28"
Gemeente Leeuwarden afdeling wijkzaken	Oldehoofsterkerkhof 2, Leeuwarden, Nederland	RGI database	53° 12' 8"	5° 47' 24"
Gemeente Nijmegen, Directie stadsbedrijven	, Nijmegen, Nederland	RGI database	51° 50' 51"	5° 51' 50"
Gemeente 's Gravenhage (Den Haag)	, Den Haag, Nederland	RGI database	52° 3' 35"	4° 20' 7"
Gemeente 's-Hertogenbosch Afdeling Ingenieursbureau	Postbus 12345. 5200 GZ 's-HERTOGENBOSCH	company website	51° 41' 12"	5° 18' 11"
Gemeente Sint-Michielsgestel	Dondersplein 1, Sint-Michielsgestel, Nederland	RGI database	51° 38' 20"	5° 21' 2"
Gemeente Tilburg	Stadhuisplein 130, Tilburg, Nederland	RGI database	51° 33' 19"	5° 5' 13"
Gemeente Utrecht afdeling Stedelijk Water en Installaties	, Utrecht, Nederland	RGI database	52° 4' 56"	5° 7' 3"
Gemeente Utrecht Afdeling Stedenbouw&Monumenten	, Utrecht, Nederland	RGI database	52° 4' 56"	5° 7' 3"
Gemeente Utrechtse Heuvelrug	Kerkplein 2, Doorn, Nederland	RGI database	52° 1' 58"	5° 20' 41"
Gemeente Velsen afdeling Brandweer en Rampenbestrijding	s-Gravenlust 35, Velsen Zuid, Nederland	RGI database	52° 27' 35"	4° 39' 2"
Gemeente Zwolle afdeling beheer openbare ruimte	, Zwolle, Nederland	RGI database	52° 30' 41"	6° 5' 34"
GeoBusiness Nederland	Pompmolenlaan 7, Woerden, Nederland	RGI database	52° 4' 33"	4° 53' 43"
Geodan Holding	President Kennedylaan 1, Amsterdam, Nederland	RGI database	52° 20' 32"	4° 54' 47"
Geografiek	Hooghiemstraplein 89, Utrecht, Nederland	RGI database	52° 5' 55"	5° 7' 30"
Geologischer Dienst NRW (GDNRW)	De Greiffstrasse 195, Krefeld, Duitsland	RGI database	51° 20' 27"	6° 32' 11"
Geonovum	Koningin Wilhelminalaan 41, Amersfoort, Nederland	RGI database	52° 9' 9"	5° 22' 25"
GeoTip	Middenweg 24, Asperen, Nederland	RGI database	51° 52' 46"	5° 6' 56"
Global Spatial Data Infrastructure Association (GSDI Association; USA)	5711 Boardman Hall, Orono, Maine, USA	RGI database	44° 54' 8"	-69° 19' 51"
Goudappel Coffeng BV	Snipperlingsdijk 4, Deventer, Nederland	RGI database	52° 15' 11"	6° 10' 11"
Grontmij Nederland bv	Holle Bilt 22, De Bilt, Nederland	RGI database	52° 6' 29"	5° 11' 30"
Hanraets Advies B.V.	Tesselschadelaan 19, Hilversum, Nederland	RGI database	52° 13' 45"	5° 10' 27"
Hogeschool Utrecht	Oudenoord 330, Utrecht, Nederland	RGI database	52° 5' 56"	5° 6' 33"
Hoogheemraadschap van Rijnland	Archimedesweg 1, Leiden, Nederland	RGI database	52° 9' 53"	4° 27' 56"
Hulpverlening Gelderland Midden	, Arnhem, Nederland	RGI database	51° 59' 15"	5° 53' 40"

HulpverleningsDienst Kennemerland	Zijlweg 200, Haarlem, Nederland	RGI database	52° 23' 11"	4° 36' 60"
Hydrologic BV	, Amersfoort, Nederland	RGI database	52° 11' 22"	5° 23' 46"
Icemobile B.V.	Eekholt 30, Diemen, Nederland	RGI database	52° 19' 47"	4° 57' 50"
Imagem B.V.	Voorsterweg 28, Marknesse, Nederland	RGI database	52° 40' 36"	5° 55' 11"
Imperial College of science, technology and medicine (London)	, London, England	RGI database	51° 29' 58"	-1° 49' 31"
Info: infrastucture, LLC	, Enschede, Nederland	RGI database	52° 12' 42"	6° 53' 44"
Ingenieursbureau Oranjewoud B.V.	Wilhelminaweg 11, Heerenveen, Nederland	RGI database	52° 56' 35"	5° 56' 50"
Innovatie en Duurzaamheid B.V.	, Utrecht, Nederland	RGI database	52° 4' 56"	5° 7' 3"
Instituut voor Ecosysteem Dynamica, Universiteit van Amsterdam	Kruislaan 318, Amsterdam, Nederland	RGI database	52° 20' 52"	4° 56' 26"
IVN Vereniging voor Natuur- en Milieueducatie	Plantage Middenlaan 2c, Amsterdam, Nederland	RGI database	52° 22' 2"	4° 54' 30"
Kadaster (Dienst voor het Kadaster en de openbare registers)	, Apeldoorn, Nederland	RGI database	52° 12' 42"	5° 57' 45"
Katholieke Universiteit Leuven; Research & Development, (Belgium)	Minderbroedersstraat 8A, Leuven, België	RGI database	50° 52' 40"	4° 41' 47"
Kiwa Water Research	Groningenhaven 7, Nieuwegein, Nederland	RGI database	52° 1' 7"	5° 6' 26"
KNMI	Wilhelminalaan 10, De Bilt, Nederland	RGI database	52° 6' 9"	5° 10' 44"
Koninklijk Nederlands Aardrijkskundig Genootschap (KNAG)	Heidelberglaan 2, Utrecht, Nederland	RGI database	52° 5' 6"	5° 10' 22"
Koninklijk Nederlands Instituut voor Onderzoek der Zee (NIOZ)	Landsdiep 4, Den Hoorn, Nederland	RGI database	53° 0' 9"	4° 47' 10"
KPN Telecom BV	Maanplein 89, Den Haag, Nederland	RGI database	52° 4' 1"	4° 20' 59"
Kverneland Group Mechatronics BV	Hoofdweg 1278, Nieuw Vennep, Nederland	RGI database	52° 15' 60"	4° 38' 15"
L.C.G. Malmberg B.V.	Leeghwaterlaan 16, s-Hertogenbosch, Nederland	RGI database	51° 41' 27"	5° 17' 26"
Laboratorium voor Stralingsonderzoek, RIVM	A. van Leeuwenhoeklaan 9, Bilthoven, Nederland	RGI database	52° 7' 7"	5° 11' 21"
Landkaartje bv	Aelbrechtskolk 39, Rotterdam, Nederland	RGI database	51° 54' 32"	4° 26' 53"
Leibniz Universität Hannover	Appelstraβe 9a, Hannover, Duitsland	RGI database	52° 23' 19"	9° 42' 46"
LOFAR / ASTRON	Oud Hoogeveensedijk 4, Dwingeloo, Nederland	RGI database	52° 48' 48"	6° 23' 46"
Mariene Informatie Service "MARIS" BV	Dillenburgsingel 69, Leidschendam, Nederland	RGI database	52° 5' 47"	4° 24' 22"
MBO Raad, Bedrijfstakgroep BHI-Infra	Houttuinlaan 6, 3447 GM Woerden	company website	52° 4' 58"	4° 53' 22"
Medusa Explorations BV	Kadijk 7b, Groningen, Nederland	RGI database	53° 14' 32"	6° 31' 45"
Meteo Consult BV	Agro Businesspark 99-101, Wageningen, Nederland	RGI database	51° 58' 37"	5° 38' 53"
Microsoft B.V.	Boeing Avenue 30, Schiphol-Rijk, Nederland	RGI database	52° 16' 41"	4° 45' 4"
Milieu en NatuurPlanbureau (MNP) voormalig onderdeel van RIVM	Bezuidenhoutseweg 30, 2594 AV Den Haag	company website	52° 5' 6"	4° 19' 43"
Ministerie van Defensie Dienst Hydrografie	Plein 4, Den Haag, Nederland	RGI database	52° 4' 45"	4° 18' 57"
Ministerie van VROM-DGR-NIB (Nationaal en Internationaal Beleid)	Rijnstraat 8, Den Haag, Nederland	RGI database	52° 4' 47"	4° 19' 26"
Ministry MUNLV of North Rhine-Westphalia (Ministerium für Umwelt und Naturschutz, Landwirtschaft und Verbraucherschutz) MUNLV-NRW	Schwannstrasse 3, Düsseldorf, Duitsland	RGI database	51° 15' 2"	6° 46' 22"

MiraMap	Toendrameer 57, Houten, Nederland	RGI database	52° 1' 23"	5° 11' 27"
Mobi-Spot BV	Haansberg 42, Etten - Leur, Nederland	RGI database	51° 34' 46"	4° 37' 52"
Movares Nederland B.V.	Rhijnspoorplein 38, 1018 TX Amsterdam	company website	52° 21' 39"	4° 54' 28"
Nationaal Onderwijs Museum	, Rotterdam, Nederland	RGI database	51° 53' 52"	4° 28' 24"
Navteq BV	De Run 1115, Veldhoven, Nederland	RGI database	51° 25' 7"	5° 25' 24"
Nederlands Interdisciplinair Demografisch Instituut (NIDI-KNAW)	Lange Houtstraat 19, Den Haag, Nederland	RGI database	52° 4' 54"	4° 18' 55"
NedGraphics CAD/GIS BV	Tuynmanweg 10, Vianen, Nederland	RGI database	51° 59' 17"	5° 6' 29"
NEO Netherlands Geomatics & Earth Observation BV	Zonnehof 16, Amersfoort, Nederland	RGI database	52° 9' 8"	5° 23' 4"
Nexpri	Heidelberglaan 2, Utrecht, Nederland	RGI database	52° 5' 6"	5° 10' 22"
NIDO Universal Machines B.V.	Industriestraat 34, Holten, Nederland	RGI database	52° 17' 0"	6° 25' 35"
Nieuwland Automatisering	Plantsoen 15, Wageningen, Nederland	RGI database	51° 58' 0"	5° 39' 43"
NIOO-CEME	Korringaweg 7, Yerseke, Nederland	RGI database	51° 29' 20"	4° 3' 26"
Nirov	Mauritskade 23, Den Haag, Nederland	RGI database	52° 5' 5"	4° 18' 26"
NMPO B.V.	Binnenhaven 1, Wageningen, Nederland	RGI database	51° 58' 6"	5° 39' 19"
Noardelike Fryske Wälden Noord Friese Wouden	Lavendelheide 9, Drachten, Nederland	RGI database	53° 6' 15"	6° 7' 48"
Noordelijke Hogeschool Leeuwarden	, Leeuwarden, Nederland	RGI database	53° 12' 4"	5° 48' 41"
Object Vision BV	Boelelaan 1085, Amsterdam, Nederland	RGI database	52° 19' 59"	4° 51' 54"
Ontwerpstudio Jacco den Haan	Kennedystraat 6a, Duiven, Nederland	RGI database	51° 56' 47"	6° 1' 7"
Opticrop BV	Agro Business Park 26, Wageningen, Nederland	RGI database	51° 58' 39"	5° 38' 45"
Pandoro Value Added Services	Nispensingel 161, Zwolle, Nederland	RGI database	52° 28' 26"	6° 6' 21"
PCRaster Environmental Software	Domplein 29, 3512 JE Utrecht	company website	52° 5' 25"	5° 7' 20"
PES Consultancy BV	Oostzeedijk Beneden 23a, Rotterdam, Nederland	RGI database	51° 55' 13"	4° 30' 45"
Portolis BV	Spoorbaanweg 23, Rhenen, Nederland	RGI database	51° 57' 34"	5° 34' 39"
Provincie Flevoland	Visarenddreef 1, 8232 JN Lelystad	company website	52° 30' 24"	5° 28' 16"
Provincie Fryslân afd. Beleidsinformatie, Cartografie en Vormgeving	Snekertrekweg 1, Leeuwarden, Nederland	RGI database	53° 11' 46"	5° 47' 10"
Provincie Gelderland Project Buiten Beter	Markt 11, Arnhem, Nederland	RGI database	51° 58' 38"	5° 54' 36"
Provincie Gelderland, Leefomgevingskwaliteit	Markt 11, Arnhem, Nederland	RGI database	51° 58' 38"	5° 54' 36"
Provincie Gelderland, Onderafdeling Water en Beheer	Markt 11, Arnhem, Nederland	RGI database	51° 58' 38"	5° 54' 36"
Provincie Gelderland, Wegendistrict	Markt 11, Arnhem, Nederland	RGI database	51° 58' 38"	5° 54' 36"
Provincie Groningen, afd. Informatievoorzining	, Groningen, Nederland	RGI database	53° 12' 21"	6° 33' 43"
Provincie Limburg	Limburglaan 10, 6229 GA Maastricht	company website	50° 50' 19"	5° 42' 4"
Provincie Noord-Brabant, Interprovinciale Overleg Groep Geo-Informatie (IOG-GEO)	Brabantlaan 1, Den Bosch, Nederland	RGI database	51° 40' 41"	5° 19' 48"

Provincie Noord-Holland, Directie Beleid	Houtplein 33, Haarlem, Nederland	RGI database	52° 22' 31"	4° 37' 52"
Provincie Overijssel Eenheid Water en Bodem	Luttenbergstraat 2, Zwolle, Nederland	RGI database	52° 30' 35"	6° 6' 15"
Provincie Utrecht, dienst Ruimte en Groen	Pythagoraslaan 101, Utrecht, Nederland	RGI database	52° 5' 34"	5° 9' 0"
Provincie Zuid - Holland	Zuid-Hollandplein 1, Den Haag, Nederland	RGI database	52° 5' 13"	4° 19' 0"
Provincie Zuid-Holland, Interprovinciale Overleg Groep Geo-Informatie (IOG-GEO)	Zuid Hollandplein 1, 2596 AW Den Haag	company website	52° 5' 13"	4° 19' 0"
Radboud Universiteit Nijmegen, Faculteit der Managementwetenschappen	Geert Grooteplein Noord 9, Nijmegen, Nederland	RGI database	51° 49' 27"	5° 51' 33"
RAVI (Stichting Overlegorgaan RAVI)	Barchman Wuytierslaan 10, 3818 LH Amersfoort	company website	52° 9' 9"	5° 22' 20"
Razar Community & Development	Huddestraat 3-5, Amsterdam, Nederland	RGI database	52° 21' 38"	4° 54' 25"
Realworld OO Systems B.V.	Venusstraat 17, Culemborg, Nederland	RGI database	51° 56' 42"	5° 12' 29"
Regio Randstad	Galileilaan 15, Utrecht, Nederland	RGI database	52° 5' 34"	5° 8' 52"
Rijksdienst voor het Oudheidkundig Bodemonderzoek (ROB)	Kerkstraat 1, Amersfoort, Nederland	RGI database	52° 9' 27"	5° 23' 27"
Rijksinstituut voor Volksgezondheid en Milieu/Centrum voor Externe Veiligheid (CVE)	Antonie van Leeuwenhoeklaan 9, 3721 MA Bilthoven	company website	52° 7' 7"	5° 11' 21"
Rijksinstituut voor Volksgezondheid en Milieu/Centrum voor Milieu-Gezondheid Onderzoek	Antonie van Leeuwenhoeklaan 9, 3721 MA Bilthoven	company website	52° 7' 7"	5° 11' 21"
RIVM-MNP	Antonie van Leeuwenhoeklaan 9, 3721 MA Bilthoven	company website	52° 7' 7"	5° 11' 21"
Ruimtelijk Planbureau	Witsenplein 6, Den Haag, Nederland	RGI database	52° 5' 35"	4° 19' 44"
RWS/AGI	Derde Werelddreef 1, 2622 HA Delft	RGI database	51° 59' 7"	4° 20' 44"
RWS/AVV	postbus 2510 heerlen 6411gw nederland	RGI database	50° 53' 32"	5° 57' 19"
RWS/Bouwdienst	Griffioenlaan 2, 3526 LA Utrecht	RGI database	52° 3' 29"	5° 6' 6"
RWS/DWW	Van der Burghweg 113 2628CS nederland	RGI database	51° 59' 53"	4° 22' 41"
RWS/Noordzee	Postbus 556 3000 AN Rotterdam	RGI database	51° 54' 54"	4° 29' 16"
RWS/Oost Nederland, Wegendistrict Arnhem-Nijmegen	Eusebiusbuitensingel 66, 6828 HZ Arnhem	RGI database	51° 58' 35"	5° 54' 52"
RWS/RIKZ	postbus 20907 2500ex den haag nederland	RGI database	52° 3' 8"	4° 14' 11"
RWS/RIZA	Postbus 17 Lelystad 8200 AA Nederland	RGI database	52° 30' 28"	5° 28' 33"
Sara Reken- en Netwerkdiensten	, Amsterdam, Nederland	RGI database	52° 21' 41"	4° 52' 58"
Sense Organisatie & Coaching	Essenlaan 6, Hoogwoud, Nederland	RGI database	52° 42' 46"	4° 56' 4"
Silve	Generaal Foulkesweg 39, Wageningen, Nederland	RGI database	51° 58' 1"	5° 40' 40"
Simpact BV	, Eindhoven, Nederland	RGI database	51° 26' 8"	5° 28' 28"
SNL (St Nicolaas Lyceum)	Prinses Irenestraat 21, Amsterdam, Nederland	RGI database	52° 20' 29"	4° 52' 45"
SOVON Vogelonderzoek Nederland	Rijksstraatweg 178, Beek Ubbergen, Nederland	RGI database	51° 49' 24"	5° 56' 12"
St Ignatius Gymnasium	Jan van Eijckstraat 47, Amsterdam, Nederland	RGI database	52° 20' 59"	4° 52' 27"
Staatsbosbeheer	Princenhof Park 1, Driebergen, Nederland	RGI database	52° 3' 56"	5° 15' 33"
Stichting Arbeidsmarkt Geo i.o.	Hofstraat 110, 7311 KZ Apeldoorn	company website	52° 12' 42"	5° 57' 45"

Stichting Bedrijvenplatform Geo-Informatie (BGI)	Watermanweg 44, Rotterdam, Nederland	RGI database	51° 57' 1"	4° 33' 31"
Stichting Centrum Beeldende Kunst Utrecht	Plompetorengracht 4, Utrecht, Nederland	RGI database	52° 5' 44"	5° 7' 24"
Stichting Centrum voor Wiskunde en Informatica (CWI)	Kruislaan 413, Amsterdam, Nederland	RGI database	52° 20' 52"	4° 56' 26"
Stichting DigiCare Foundation	Waldeck Pyrmontkade 116, Den Haag, Nederland	RGI database	52° 4' 42"	4° 17' 35"
Stichting Geodelft	, Delft, Nederland	RGI database	52° 0' 2"	4° 20' 28"
Stichting GeoFort	Nieuwe Steeg 74, Herwijnen, Nederland	RGI database	51° 51' 56"	5° 7' 29"
Stichting Geomatics Business Park	Voorsterweg 28, 8316 PT Marknesse	company website	52° 40' 36"	5° 55' 11"
Stichting Infrastructuur Kwaliteitsborging Bodemonderzoek (SIKB)	Büchnerweg 1, Gouda, Nederland	RGI database	52° 1' 17"	4° 42' 13"
Stichting International Institute for Geo-Information Science and Earth Obseration (ITC)	Hengelosestraat 99, Enschede, Nederland	RGI database	52° 13' 26"	6° 53' 10"
Stichting International Soil Reference and Information Centre (Isric)	Duivendaal 9, Wageningen, Nederland	RGI database	51° 58' 4"	5° 39' 32"
Stichting Landelijk Samenwerkingsverband GBKN (LSV-GBKN)	, Apeldoorn, Nederland	RGI database	52° 11' 46"	5° 56' 44"
Stichting Museon	Stadhouderslaan 37, Den Haag, Nederland	RGI database	52° 5' 20"	4° 16' 52"
Stichting Nationaal Clearinghouse voor Geoinformatie (NCGI)	Hofstraat 110, 7311 KZ Apeldoorn	company website	52° 12' 42"	5° 57' 45"
Stichting Nationaal Lucht- en Ruimtevaartlaboratorium (NLR)	Anthony Fokkerweg 2, Amsterdam, Nederland	RGI database	52° 20' 42"	4° 50' 38"
Stichting Nationaal Natuurhistorisch Museum Naturalis	Darwinweg 2, Leiden, Nederland	RGI database	52° 9' 53"	4° 28' 24"
Stichting Nederlands Normalisatie-instituut	, Delft, Nederland	RGI database	52° 1' 10"	4° 22' 18"
Stichting RAVON	Toernooiveld 1, Nijmegen, Nederland	RGI database	51° 49' 25"	5° 52' 2"
Stichting RIONED	, Ede, Nederland	RGI database	52° 2' 15"	5° 40' 6"
Stichting SRON	Sorbonnelaan 2, Utrecht, Nederland	RGI database	52° 5' 16"	5° 9' 51"
Stichting Veldwerk Nederland	Het Woldhuis 11, Apeldoorn, Nederland	RGI database	52° 12' 24"	6° 1' 59"
Stichting voor Duurzame Ontwikkeling	Ritzemabosweg 32a, Wageningen, Nederland	RGI database	51° 58' 11"	5° 40' 39"
Stichting Vrienden van het Platteland	, Wageningen, Nederland	RGI database	51° 57' 52"	5° 39' 48"
Stichting Wetenschappelijke Atlas	Heidelberglaan 2, Utrecht, Nederland	RGI database	52° 5' 6"	5° 10' 22"
Studio Haverstraat	Haverstraat 21BIS, 3511 NA Utrecht	company website	52° 5' 18"	5° 7' 13"
SVGV Stichting Venieuwing Gelderse Vallei	, Scherpenzeel, Nederland	RGI database	52° 4' 51"	5° 29' 19"
Synoptics	Costerweg 1k, Wageningen, Nederland	RGI database	51° 57' 49"	5° 39' 31"
Tauw bv	Handelskade 11, Deventer, Nederland	RGI database	52° 15' 19"	6° 9' 53"
Technical University of Vienna, unit: Institute of "Geoinformation und Kartographie" (TU Wien)	Gusshausstrasse 27-29, Vienna, Austria	RGI database	48° 11' 47"	16° 22' 12"
Technische Universiteit Delft (TU Delft)	Julianalaan 134, Delft, Nederland	RGI database	52° 0' 20"	4° 22' 14"
Technische Universiteit Eindhoven (TU Eindhoven)	, Eindhoven, Nederland	RGI database	51° 26' 55"	5° 29' 27"
TerraImaging B.V.	Konigslaan 35, Amsterdam,	RGI database	52° 21' 18"	4° 51' 43"

	Nederland			
The Aachen University, Department of Engineering Geology and Hydrogeology	Templergraben 55, Aachen, Duitsland	RGI database	50° 46' 40"	6° 4' 40"
The Personal Company of Ludvig Emgard (Sweden)	Exercisgatan 11, Malmö, Sweden	RGI database	55° 36' 10"	13° 1' 4"
The SmartAgent Company Nederland B.V.	Dodeweg 6a, Leusden, Nederland	RGI database	52° 7' 51"	5° 23' 31"
TNO Bouw en Ondergrond	Van Mourik Broetmanweg 6, Delft, Nederland	RGI database	51° 59' 55"	4° 22' 43"
TNO Defensie en Veiligheid	Schoenmakerstraat 97, Delft, Nederland	RGI database	52° 0' 3"	4° 22' 46"
TNO-NITG	Princetonlaan 6, Utrecht, Nederland	RGI database	52° 5' 19"	5° 9' 58"
TOPCON Nederland	De Kronkels 14, Bunschoten, Nederland	RGI database	52° 13' 55"	5° 21' 52"
Toposcopie	Badlaan 3, Doorwerth, Nederland	RGI database	51° 58' 44"	5° 46' 49"
TU Dresden, Professur Photogrammetrie	Helmholtzstrasse 10, Dresden, Duitsland	RGI database	51° 1' 44"	13° 43' 26"
Uitgeverij Zwijsen B.V.	Hart van Brabantlaan 18, 5038 JL Tilburg	company website	51° 33' 36"	5° 4' 34"
Unit040 Ontwerp B.V.	Esp 134b, 5633 AA Eindhoven	company website	51° 29' 15"	5° 29' 34"
Universiteit Utrecht, faculteit Bètawetenschappen, departement Informatica	Heidelberglaan 8, Utrecht, Nederland	RGI database	52° 5' 7"	5° 10' 32"
Universiteit Utrecht, faculteit Bètawetenschappen, onderdeel het Freudenthal Instituut	Aidadreef 12, Utrecht, Nederland	RGI database	52° 6' 38"	5° 7' 34"
Universiteit Utrecht, Faculteit der Diergeneeskunde, Institute for Risk Assessment Sciences (IRAS)	Yalelaan 2, Utrecht, Nederland	RGI database	52° 4' 60"	5° 10' 42"
Universiteit Utrecht, Faculteit Geowetenschappen	Heidelberglaan 2, Utrecht, Nederland	RGI database	52° 5' 6"	5° 10' 22"
Universiteit van Amsterdam, Faculteit Rechtsgeleerdheid	Spui 21, Amsterdam, Nederland	RGI database	52° 22' 7"	4° 53' 25"
Universiteit van Tilburg	Warandelaan 2, Tilburg, Nederland	RGI database	51° 33' 51"	5° 2' 37"
Universiteit van Utrecht, Departement Fysische Geografie (DFG)	Heidelberglaan 2, Utrecht, Nederland	RGI database	52° 5' 6"	5° 10' 22"
University of Glamorgan (Wales; UK)	, Pontypridd, Wales, UK	RGI database	51° 35' 37"	-4° 40' 42"
University of Melbourne	Victoria 3010, Melbourne, Australië	RGI database	-38° 12' 13"	144° 57' 35"
Van der Valk + de Groot	, Poeldijk, Nederland	RGI database	52° 1' 22"	4° 12' 42"
VB Ecoflight	Voederheil 3, Zeeland (N.B.), Nederland	RGI database	51° 42' 22"	5° 40' 44"
Veen Magazines BV	Wildenborch 5, Diemen, Nederland	RGI database	52° 19' 41"	4° 57' 40"
Veiligheidsregio Noord- en Oost-Gelderland	Pr. W. Alexanderlaan 1419, Apeldoorn, Nederland	RGI database	52° 12' 23"	5° 56' 58"
Veiligheidsregio Rotterdam-Rijnmond	Wilhelminakade 947, Rotterdam, Nederland	RGI database	51° 54' 21"	4° 29' 12"
Vereniging Agribase	Van Ledenberchstraat 10, Leiden, Nederland	RGI database	52° 10' 29"	4° 28' 35"
Vereniging Geo-Informatie Nederland	, Deurne, Nederland	RGI database	51° 27' 49"	5° 47' 43"
Vexcel Nederland	Costerweg 1, Wageningen, Nederland	RGI database	51° 57' 49"	5° 39' 31"
Vitens N.V.	Boogschutterstraat 29a, Apeldoorn, Nederland	RGI database	52° 14' 22"	5° 58' 48"
Vrije Universiteit van Amsterdam VU-Onderwijscentrum	De Boelelaan 1105, Amsterdam, Nederland	RGI database	52° 20' 4"	4° 51' 57"

Vrije Universiteit van Amsterdam, Spinlab	De Boelelaan 1105, Amsterdam, Nederland	RGI database	52° 20' 4"	4° 51' 57"
Vrije Universiteit, afdeling Tektoniek	De Boelelaan 1105, Amsterdam, Nederland	RGI database	52° 20' 4"	4° 51' 57"
VROM--DGR-NIB-DURP (Digitale Uitwisseling in Ruimtelijke Processen)	Rijnstraat 8, 2515 XP Den Haag	company website	52° 4' 47"	4° 19' 26"
Waag Society	Nieuwmarkt 4, Amsterdam, Nederland	RGI database	52° 22' 22"	4° 54' 1"
Wallingford Software	Howbery Park, Wallingford, Oxfordshire, UK	RGI database	51° 36' 23"	-2° 53' 16"
Waterschap Rijn en IJssel	, Doetinchem, Nederland	RGI database	51° 57' 59"	6° 17' 19"
Waterschap Rivierenland	Westluidensestraat 46, Tiel, Nederland	RGI database	51° 53' 3"	5° 26' 13"
Waterwatch	Generaal Foulkesweg 28a, Wageningen, Nederland	RGI database	51° 58' 0"	5° 40' 15"
Web Integration	Piekstraat 21a, Rotterdam, Nederland	RGI database	51° 54' 31"	4° 30' 41"
Webmapper	Rijnhuizenlaan 11-II, Utrecht, Nederland	RGI database	52° 4' 5"	5° 7' 18"
Weierstrass Institute for Applied Analysis and Stochastics in Forschungsverbund Berlin e.V. (WIAS)	Mohrenstraße 39, 10117 Berlin, Germany	company website	52° 30' 46"	13° 23' 45"
WL Delft Hydraulics	Rotterdamseweg 185, Delft, Nederland	RGI database	51° 59' 10"	4° 22' 46"
WUR (Wageningen UR, WU, DLO)	6708 PB Wageningen	company website	51° 59' 18"	5° 40' 15"
WUR Wageningen Universiteit, Departement Omgevingswetenschappen	Droevendaalsesteeg 4, 6708 PB Wageningen	company website	51° 59' 11"	5° 40' 5"
WUR Wageningen Universiteit, Departement Plantenwetenschappen	Droevendaalsesteeg 1, Wageningen, Nederland	RGI database	51° 59' 12"	5° 39' 48"
WUR-ALTERRA	Droevendaalsesteeg 1, Wageningen, Nederland	RGI database	51° 59' 12"	5° 39' 48"
WUR-LEI	6708 PB Wageningen	company website	51° 59' 18"	5° 40' 15"
WUR-Praktijkonderzoek Plant & Omgeving B.V. (PPO)	Bornsesteeg 47, Wageningen, Nederland	RGI database	51° 58' 57"	5° 39' 47"
WUR-Praktijkonderzoek Veehouderij (PV)	De Elst 1, 6708 WD Wageningen	company website	51° 59' 2"	5° 39' 32"
Yucat BV	Hoofdstraat 248, Driebergen, Nederland	RGI database	52° 2' 43"	5° 17' 45"
Zenc BV	Plein 1813 nr. 5, Den Haag, Nederland	RGI database	52° 5' 12"	4° 18' 10"

7.2 Vincenty inverse solution, (Vincenty, 1975)

a, b = major & minor semi-axes of the ellipsoid

f = flattening $(a-b)/a$

φ_1, φ_2 = geodetic latitude

L = difference in longitude

$\tan U_{1/2} = (1-f) \cdot \tan \varphi_{1/2}$ *(U is 'reduced latitude')*

$\cos U_{1/2} = 1 / \sqrt{1 + \tan^2 U_{1/2}}$, $\sin U_{1/2} = \tan U_{1/2} \cdot \cos U_{1/2}$ *(trig identities; §6)*

$\lambda = L$ *(first approximation)*

iterate until change in λ is negligible *(e.g. $10^{-12} \approx 0.006mm$)* {

$$\sin \sigma = \sqrt{[(\cos U_2 \cdot \sin\lambda)^2 + (\cos U_1 \cdot \sin U_2 - \sin U_1 \cdot \cos U_2 \cdot \cos \lambda)^2]} \quad (14)$$

$$\cos \sigma = \sin U_1 \cdot \sin U_2 + \cos U_1 \cdot \cos U_2 \cdot \cos \lambda \quad (15)$$

$$\sigma = \operatorname{atan}(\sin \sigma / \cos \sigma) \quad (16)$$

$$\sin \alpha = \cos U_1 \cdot \cos U_2 \cdot \sin \lambda / \sin \sigma \quad (17)$$

$$\cos^2 \alpha = 1 - \sin^2 \alpha \quad \textit{(trig identity; §6)}$$

$$\cos 2\sigma_m = \cos \sigma - 2 \cdot \sin U_1 \cdot \sin U_2 / \cos^2 \alpha \quad (18)$$

$$C = f/16 \cdot \cos^2 \alpha \cdot [4 + f \cdot (4 - 3 \cdot \cos^2 \alpha)] \quad (10)$$

$$\lambda' = L + (1 - C) \cdot f \cdot \sin \alpha \cdot \{\sigma + C \cdot \sin \sigma \cdot [\cos 2\sigma_m + C \cdot \cos \sigma \cdot (-1 + 2 \cdot \cos^2 2\sigma_m)]\} \quad (11)$$

}

$u^2 = \cos^2 \alpha \cdot (a^2-b^2)/b^2$

$$A = 1 + u^2/16384 \cdot \{4096 + u^2 \cdot [-768 + u^2 \cdot (320 - 175 \cdot u^2)]\} \quad (3)$$

$$B = u^2/1024 \cdot \{256 + u^2 \cdot [-128 + u^2 \cdot (74 - 47 \cdot u^2)]\} \quad (4)$$

$$\Delta\sigma = B \cdot \sin \sigma \cdot \{\cos 2\sigma_m + B/4 \cdot [\cos \sigma \cdot (-1 + 2 \cdot \cos^2 2\sigma_m) - B / 6 \cdot \cos 2\sigma_m \cdot (-3 + 4 \cdot \sin^2 \sigma) \cdot (-3 + 4 \cdot \cos^2 2\sigma_m)]\} \quad (6)$$

$$s = b \cdot A \cdot (\sigma - \Delta\sigma) \quad (19)$$

$$\alpha_1 = \operatorname{atan}(\cos U_2 \cdot \sin \lambda / \cos U_1 \cdot \sin U_2 - \sin U_1 \cdot \cos U_2 \cdot \cos \lambda) \quad (20)$$

$$\alpha_2 = \operatorname{atan}(\cos U_1 \cdot \sin \lambda / -\sin U_1 \cdot \cos U_2 + \cos U_1 \cdot \sin U_2 \cdot \cos \lambda) \quad (21)$$

Where:

- s is the geodesic distance along the surface of the ellipsoid (in the same units as a & b)
- α_1 is the initial bearing, or forward azimuth
- α_2 is the final bearing (in direction $p_1 \rightarrow p_2$)

7.3 Project database

Project	Title	No. of parners	Average distance	Score ARG	Sub score ARG Finance	Sub score ARG Innovation	Lid ARW	Score ARW	Sub score ARW Finance	Sub score ARW Innovation	Blau index Type	Number of links	Degree of connectivity
001	Geogradische Dimensies van Risicomanagement	7	53								0.61	41	0.39
002	Generen en gebruik van ondergronden (basiskaarten) bij geïntegreerde bevraging van digitale ruimtelijke plannen	9	77	2		2	6	2	2	2	0.72	40	0.38
003	Virtueel Nederland	8	44				3				0.72	35	0.33
004	Geoboer	10	51	1	2	1	4	2	3	2	0.64	21	0.20
005	Ontwikkeling van Raamwerk ter beoordeling van Nationale Geo-Informatie Infrastructuren	3	11056	2	2	2	2	2	2	1	0.00	30	0.28
006	Geoloketten, vrijheid in verbondenheid	14	49	3	3	3	6	2	3	2	0.79	55	0.52
008	Omgaan met onzekere planobjectenbij monitoring en analyse van ruimtelijk beleid	10	60	2		3	5	2	2	2	0.74	43	0.41
010	Grensoverschrijdend Waterbeheer Initiatief (t.o.v. Implementatie van Europese Kaderrichtlijn Water tussen Nederland en Nordrhein-Westfalen, Duitsland)	12	98				2				0.76	38	0.36
011	3d Topografie	5	283	2	3	2	2	1	2	2	0.80	21	0.20
012	Het blauwe knooppunt	3	57								0.67	9	0.08
013	Virtual reality voor stedelijke planning en veiligheid	5	118	2	2	2	7	2	2	3	0.56	22	0.21

014	Nationale Infrastructuur voor ontsluiting van Oceanografische en Mariene en Informatie (NODC-i)	9	60	3	3	3	4	3	3	2	0.59	16	0.15
017	Behoefte Geo voor beleid landelijk gebied	5	6663	3		3	5	2	2	2	0.64	21	0.20
019	Haalbaarheidsonderzoek naar een Nationale Populatie Bestand	5	47								0.32	11	0.10
022	Educatief GIS-portaal (EduGIS)	10	45	2	2	2	6	2	2	1	0.74	24	0.23
023	LUMOS Definitiestudie	7	58				3				0.69	29	0.27
024	GEOGOV	4	59	2	1	2	5	2	2	3	0.38	1	0.01
025	RGCI: Ruimte voor Geo-Chemische Informatie	2	36								0.00	24	0.23
026	Location Based Services 24-7 (LBS-24-7)	9	70								0.62	34	0.32
027	MUTATIS MUTANDIS	14	82	2	2	2	2	3		3	0.74	48	0.45
028	Degradatie van archeologische waarden in de Nederlandse ondergrond	5	21								0.72	43	0.41
029	Geo-Informatie Management voor Civieltechnische Infrastructurele Werken (GIMCIW)	11	66	3	3	3	6	3		2	0.63	31	0.29
031	GI-ondersteuning voor regionale planning	4	46								0.63	31	0.29
101	Speelruimte met Simlandscape	5	46	3		3	5	2	2	3	0.72	31	0.29
102	Verkeersverwachting	3	62	3	3	3	6	3	3	3	0.44	4	0.04
106	Geo-Bos: Geo-spreiding gevoeligheid bossen voor klimaatverandering	3	21				5				0.44	0	0.00
111	De Nationale Atlas als toegangspoort tot de geodata infrastructuur	4	86	3	3	3	4	2	2	2.5	0.38	7	0.07
113		1	0								0.00	2	0.02

116	Verkenning van innovaties bij geo-standaarden voor NGII	8	1460	2	2	3	3	2	3		0.72	35	0.33
117	Geo-data, van verstrekking naar toegang — een verkenning naar de organisatorische, juridische en financiële belemmering bij de toegankelijkheid van geo-data.	10	47	2	2	2	7	3	3	2	0.66	38	0.36
123	Brandweer 100% mobiel	6	55	2	2	2	3	3	2	2	0.44	1	0.01
128	Geo-informatie voor risicopreventie	12	52	3	3	3	3	2	3	3	0.76	46	0.43
129	CycloCity: Panoramische Virtual Reality	2	28				1	2	2	2	0.50	2	0.02
132		0									#DIV/0!		0.00
137	Gebruik van geografische informatie voor schatting van humane blootstelling aan luchtverontreiniging	3	252	3	3	3	1	3	3	2	0.44	0	0.00
147	Real-time inwinning van geo-informatie bij grootschalige calamiteiten	4	48				3				0.63	2	0.02
149	Geo-info to-go - Geo-informatievoorziening ter plekke	7	67				5				0.45	26	0.25
150	3D plaatsbepaling infrastructuur in bebouwde omgeving	3	446	3	2	3	2	3	3	3	0.44	20	0.19
153	GI-competenties voor GI-onderwijs en GI-werkveld	4	35								0.63	22	0.21
154	Toegang tot de BRON	5	58	3	4	4	5	3	3	3	0.64	31	0.29
156	DIGITALE WICHELROEDE[1] © [2] : de opzet van locatie-afhankelijk informatie service voor educatief toerisme.	9	40	3	3	3	1	2	3	3	0.67	35	0.33
160	Mensen in beweging: Het plannen van mobiliteit in het landschap	1	0	3	3	4	5	2	2	3	0.00	19	0.18
162	Nationaal geo-data model voor rioleringen	12	133				8				0.63	8	0.08

164	GeoWeek	20	66				1				0.70	18	0.17
166	Innovaties in archeologisch vooronderzoek	9	107	3	2	3	4	3	3	2	0.49	2	0.02
168	Preventieve Gladheidsbestrijding op basis van meteoro-logische, thermal-mapping en GPS data ter plekke	7	25	3	3	3	6	3	3	3	0.41	9	0.08
169	Kunst-o-Pedia	2	57				1				0.00	0	0.00
172	Het topsysteem van de ondergrond: Een Reactievat	12	57	2	2	2	6	3	3	3	0.74	32	0.30
173	Projectvoorstel Sense of the City	5	78				1				0.64	5	0.05
176	GeoBoer; Uitwisseling van perceelsgeometrie met de overheid.	4	67	4		4	4	4	4	4	0.63	20	0.19
180	Marktonderzoek DURP Portaal	5	33								0.56	17	0.16
182	Direct automatisch interpoleren van gegevens uit waarschuwingsmeetnetten	2	36	2	2	2	4	2	3	2	0.00	13	0.12
184	Atmosferische data voor de geospatiële gebruikersgemeenschap	2	2	2	2	2	5	3	3	3	0.50	4	0.04
189	Sensors als databronnen aan de geo-informatie infrastructuur	10	72	3	3	4	3	3		3	0.74	38	0.36
190	SIMCLIMATE Klimaat simulaties en natuurlijke archieven GIS: een sleutel tot de toekomst	1	0	3	2	3	2	3	3	3	0.00	11	0.10
203	Hoogwatervoorspelling op basis van satelliet- en radarinformatie	2	74				3				0.00	2	0.02
206	BurgerGIS	3	74	2	2	3	7	4	2		0.44	8	0.08
208	Die wereld van straks…. is wel jouw toekomst hoor!!! Serious game voor de toekomstige watermanagers	2	28				1				0.00	0	0.00
209	Wonen Zorg en Welzijn	3	34								0.44	2	0.02

	KansenKaarten												
210	SRGO; Symbolenset Rampenbestrijding en Grootschalig Optreden	1	0				3				0.00	0	0.00
217		2	41								0.00	6	0.06
220		4	36								0.38	13	0.12
228	Modelleren met GIS: OpenMI als standaard voor het ontsluiten van tijdsafhankelijke ruimtelijke data en het koppelen van simulatiemodellen	4	36				4				0.63	10	0.09
231	Geolocatie van natuurwaarnemingen per mobiele telefoon	5	40	3	3	3	4	3	4	2	0.32	0	0.00
232	GeoInfoNed, Een multimedia geo-database infrastructuur	4	51	3	3	3	2	3	3	2	0.75	21	0.20
233	Usable (and well scaled) mobile maps for consumers	5	76	2	1	1	1	1	2	3	0.64	25	0.24
239	Open Veiligheidsplatform voor het operationeel gebruik van geo-informatie tijdens calamiteiten	11	55	2	2	2	3	2	3	3	0.60	33	0.31
240	geoMAX: Beleef de Nederlands ondergrond en zijn dynamiek: Virtuele excursie, games en omgevingsbewustzijn	5	31	3	3	2	1	2	3	2	0.32	11	0.10
243		2									0.00	0	0.00
245	Automatisch monitoren van fysieke veranderingen door middel van luchtfoto's en laserhoogtedata voor gemeentelijk beheer	3	58				8				0.44	1	0.01
246	Natuurlijk gezond van dag tot dag: een nationale interactieve website voor het monitoren, voorspellen, beheren en communiceren van	4	41	3	3	3	1	4	4	3	0.63	4	0.04

	gezondheidsrisico's uit de natuur in ruimte en tijd.												
248		1	0								0.00	1	0.01
251	Droogteschade bij waterschappen voorkomen door het toepassen van aardobservatietechnieken.	3	65	4			3				0.67	5	0.05
253	UMTS VideoCall 2 Help	1	0				5				0.00	0	0.00
254	LUMOS	10	46	2		2	5	2	2	2	0.72	29	0.27
255	Experimenteeromgeving Geo-informatieprojecten	9	57				3				0.64	23	0.22
302	Karteringsdiensten voor nucleaire en radiologische noodsituaties	2	36	3	3		3	2	3	3	0.50	18	0.17
305	GIS en haar toegevoegde waarde voor andere wetenschapsdisciplines	2	435	3	2	3	4	2	2		0.00	9	0.08
307	Een geo-informatica tool als planning support systeem (PSS) in de kantorensector	3	96	4		4	5	4	4	4	0.44	7	0.07
310	Historisch GIS Friesland: verbreding tot voorbeeldsite historische geo-informatie	3	107				3				0.44	1	0.01
313	Koppeling van ruimtelijke optimalisatie methoden en ruimtelijk gedistribueerde simulatie modellen	2	49	2		3	2	2		2	0.50	5	0.05
314	Ontsluiting van RO-plannen in Flamingo, aangedreven door Google	3	113	3	3		6	3	2	4	0.00	3	0.03
315	Cow Cow Navigator	1	0								0.00	0	0.00
316	Nieuwe wegen in de wisselwerking tussen geo-informatietechnologie en ruimtelijke planning;	0									#DIV/0!		0.00

	inventarisatie en analyse van Bsik innovaties												
319	0	2	88								0.00	26	0.25
323	Dropzone	0					5				#DIV/0!		0.00
324	De toekomst van deze plek	1	0								0.00	0	0.00
326	Het meten van geo-informatie infrastructuur performance in relatie tot het financieringsproces	2	213								0.50	0	0.00
327	Internationaal consortium voor onderzoek en onderwijs in geovisuele analyse	0									#DIV/0!		0.00
330	Innovatief Geo-Onderwijs, investering in de kenniseconomie van de toekomst	8	57	2		3	1	2	1	2	0.22	3	0.03
331	Bevorderen van het gebruik van geo-informatie in de alfawetenschappen	1	0	3	3	3	11	2	1	3	0.00	1	0.01
335	Het jaar van de Geo-Informatie: 2008	5	40	3	3	3	6	3	3	3	0.72	27	0.25
340	Een GIS voor natuurlijke archieven van overstromingsfrequenties	0									#DIV/0!		0.00
401	Transitiemonitoring t.b.v. Ruimte voor Geo-Informatie	2	14	3	2	3	1	4	4	4	0.50	12	0.11
402	Effect van "Space for Geo-information" op GIScience in Nederland	2	0	2	2		3	3	3		0.50	9	0.08
404	Netherlands Geo-information Research Infrastructure	7	75	3	3	4	1	3	3	3	0.57	43	0.41
405	Een remote-sensing knooppunt binnen de NGII	1	0	2	2	2	1	3	3	2	0.00	5	0.05
406	Proeftuin Virtuele Werelden	5	74	3	4	3	7	3	3	1	0.48	4	0.04
407	Themacoördinatie NGII	2	32	2			1	2	2	2	0.50	25	0.24
408	Themacoördinatie OOV	1	0	2			1	2	2	2	0.00	0	0.00

409	Themacoördinatie COL	1	0	3			1	3	2	2	0.00	4	0.04
410	Themacoördinatie ROI	1	0	2			1	3	2	3	0.00	11	0.10
411	Themacoördinatie Wetenschap	2	1	1			1	2	2		0.50	31	0.29
412	Flevoland GeoRegio	5	71	3	3	3	7	4	4	4	0.72	36	0.34
413	Verankering RGI-resultaten	1	0	2	2	2	1	2	2	2	0.00	3	0.03
414	GeoWeek 2008	1	0	2	1	3	1	3	3	3	0.00	4	0.04
415	Opzet Stichting Arbeidsmarkt Geodesie en Geo-Informatie	9	69	2		3	7	4	2	2	0.57	38	0.36
416	De geosector in kaart	5	49	2	1	3	7	3	2		0.72	24	0.23
417	Brandweer 100% mobiel top-up	2	106								0.00	1	0.01
418	Van Schetsboek naar Klimaatatlas	5	23	3	3	3	1	3	3	2	0.72	27	0.25
420	Nederland Geoland	7	54	2	2	2	7	2	2	2	0.73	40	0.38
421	Nederlandse bijdrage aan UNSDI	1	0	2	3	3	4	3	4	3	0.00	5	0.05

7.4 Complete set of evaluation criteria of RGI projects

1. Quality of the official end-report, gives the report enough and relevant information for an evaluation of the project performance
2. Synergy with other RGI projects and BSIK programs (If applicable)
3. Knowledge sharing and communication
4. Finances: Did the project achieve valuable results compared to the financial efforts. And did the project stay within the project budget.
5. International positioning (if applicable)
6. The contribution to the overall program performance and DIN milestones
7. Quantitative center milestones
8. Part of academic research (PhD) if applicable
9. Innovative, valorization and embedded implementation of results and products
10. Learning experience of the project
11. Rate the society value result of the project as a whole: do the end results and the products match the quality demands of RGI?
12. What would you like to say to the RGI management /or the project. (Compliment, concern, advice etc.) Elements from the end review can be used in the letter of the management to the project leader and in the theme reports.