



Vaasan yliopisto
UNIVERSITY OF VAASA

Evaluation of Research Activities 2010–2014

Final Report



Contents

1	Preface	5
2	Forewords	6
3	Introduction to the evaluation process	8
4	Reports from the peer review panels	10
4.1	University Panel.....	11
4.1.1	University level evaluation	12
4.2	Panel of Administrative Sciences and Humanities	24
4.2.1	Evaluation of the scientific fields of Administrative Sciences and Humanities.....	25
4.2.2	Deliberative Welfare Policy Management Research Group.....	28
4.2.3	Practices and Discourses of Management Research Group.....	31
4.2.4	Social and Cultural Phenomena Research Group.....	34
4.3	Panel of Business Studies	38
4.3.1	Evaluation of the scientific field of Business Studies.....	39
4.3.2	Auditing and Control in Accounting Research Group.....	42
4.3.3	Business Law, Information and Knowledge Research Group	45
4.3.4	Consumption Research and Customer Value Creation Research Group	48
4.3.5	Finance and Financial Accounting Research Group.....	51
4.3.6	Human Resource Management Research Group	53
4.3.7	Intangible Capital Research Group.....	56
4.3.8	International Business and Marketing Research Group.....	59
4.3.9	Personality Approach to Leadership and Organizational Behaviour Research Group	62
4.4	Joint evaluation of the Panels of Business Studies and Technology	64
4.4.1	Networked Value Systems Research Group	65
4.5	Panel of Technology	68
4.5.1	Evaluation of the scientific field of Technology.....	69
4.5.2	Mathematics and Statistics	72
4.5.3	Renewable Energy	74
4.5.4	Smart Electric Systems.....	77

4.5.5	SC-Research	80
4.6	Summary table of the numerical ratings.....	82
5	Bibliometric report: Research performance analysis for the University of Vaasa	83

1 Preface

This report presents the results of the overall research evaluation of the University of Vaasa. The evaluation was executed during 2015 and it focused on the research activities of the University of Vaasa in the years 2010-2014. The basic units of assessment were research groups.

The University of Vaasa is a business-oriented multidisciplinary university offering degrees at all academic levels from bachelor's to doctor's. The teaching and research activities of the university focus on business studies, languages and communication, administrative sciences and technology. The university functions in three faculties: Faculty of Business Studies, Faculty of Philosophy and Faculty of Technology. There are around 5000 students and 520 staff members at the university.

2 Forewords

University of Vaasa carries out evaluation of its research activities once every five year. This cycle is specified by the university strategy. The previous evaluation of the research activities was carried out in 2010. Since then several major changes has happened in the Finnish higher education system. The need for fresh research evaluation information is highlighted by the changes in the University Act, higher education funding structures, performance monitoring, and on-going restructuring of higher education system.

As indicated in the recent report addressing the higher education system , Finland's higher education has been undergoing a significant structural reform since 2005. The aim of this reform is to ensure that by 2020 Finland is the most competent country in the world. Among the major developments was the new Universities Act that was adopted in 2010. It was set out to ensure that Finnish universities have equal operational conditions with world-class universities. In the new regime Universities became independent legal persons separated from the state and they gained financial autonomy with greater flexibility in the acquisition of external funding and utilisation of the capital and financial assets. Universities are also responsible for their human resources and their public accountability has been enhanced through the mandatory inclusion of non-university representatives in the governance.

Changes in the university funding system are also significant. Finland has traditionally made substantial investments in education and research. However, recent cuts on public spending on education and research have diminished the funding by 10% between 2011 and 2014. In 2015 the government made significant further cuts to university funding which creates a further challenge for universities seeking to improve the quality of their research outputs. During 2015 also the funding formula for universities is being updated in cooperation with the higher education institutions in order to address the needs of the coming years 2017–2020. The elaborate indicator-based system has over the years become increasingly complex. At the same time the influence of performance agreements has been diminished due to the indicator-driven performance-based funding system for the universities.

The Research and Innovation Council advises the government on the strategic development and coordination of Finnish science and technology policy as well as the national innovation system. For the period from 2015 to 2020 the Council emphasises the need to radically restructure the higher education system, focus on the quality of research and closer collaboration between universities, businesses and research institutes, and further develop the dual model of Finnish higher education, as well as specialisation, and gather competitive centres of excellence under different fields.

The current 2015 evaluation benefits from the lessons and good practices identified during the previous research evaluation exercise. Starting from the detailed level the evaluation will address research activities and performance of different research groups. On the scientific field and university level analysis it sheds light on the overall management of research activities. Furthermore, this analysis addresses the strategic positioning and research profiling decisions taken on the faculty level. The evaluation utilizes a variety of material in the analysis including self-evaluations by the research groups and assessments by the international evaluation

panels complemented by bibliometric analysis of research impacts. All these perspectives and variety of materials yield an analysis which provides valuable insights into the research activities of the University of Vaasa.

The evaluation will inform the ongoing new strategy 2017-2020 formulation for the University of Vaasa. The results will also create better basis for decisions on allocating the limited resources so that the University of Vaasa will remain competitive amongst the research universities of the world.

Finally, we would like to express our sincere thanks for the entire evaluation panel, as well as for university staff for their excellent contributions to the evaluation process and finalizing of the report.

Jari Kuusisto
Acting Rector

3 Introduction to the evaluation process

Organisation of the evaluation process

According to the current strategy of the University of Vaasa, the university carries out an evaluation of all its research activities every five years. The first evaluation was executed in 2010. On 7 October 2013, the Rector nominated a steering group to support the execution of the evaluation in 2015. The group was chaired by the Vice Rector for Research, Professor Vesa Suutari. Other members were Professors Petri Helo (Faculty of Technology), Jorma Larimo (Faculty of Business Studies) Harry Lönnroth (Faculty of Philosophy) and Seija Virkkala (Faculty of Philosophy), Head of Research and Innovation Services Marita Niemelä, Quality Manager Kari Rossi and Executive Assistant Anne Sved. The steering group was responsible for deciding on the structure and composition of the evaluation panels, the criteria to be applied, and the materials to be provided to the panels, as well as other methods of implementation.

The steering group decided that external peer review by international panels will form the core of the evaluation exercise. In parallel, a bibliometric analysis was carried out to complement the peer review evaluation. The University requested the Centre for Science and Technology Studies (CWTS) of Leiden University to perform the bibliometric analysis. Due to differences in publication practices in different scientific fields, the steering group decided that the bibliometric analysis only includes the Faculties of Business Studies and Technology.

The evaluation was funded by the University of Vaasa.

Evaluation panels

The peer review evaluation was performed by four panels of independent scientific experts. Three of the panels were discipline-specific and each of them evaluated the research groups within one or two discipline (Administrative Sciences and Humanities, Business Studies, Technology). One member of each panel was asked to chair the panel. The panel chair was responsible for supervising the panel's progress, especially for ensuring that the panel provided the university with research group and scientific field level reports in due time.

The fourth panel, the University Panel, was responsible for providing a university-level evaluation report and university-wide recommendations for future development. The University Panel was chaired by the University Panel chair. The other members of the University Panel were the chairs of the discipline-specific panels and vice-chair for the panel of Administrative Sciences and Humanities. Through this composition, all scientific fields of the University of Vaasa were represented in the University Panel. The University Panel chair also participated in all discipline-specific panels. His responsibility was to ensure the commensurability of the panels' evaluations.

Evaluation materials and site visits

The evaluation was based on desk research and site visits conducted by the panels. The written background material included descriptions of the research groups and resources appointed to them, descriptions of the groups' research orientation, information about the volume of publications and samples of the most relevant publications, descriptions of researcher training in the groups, a description of the groups' international and national cooperation and a description of the societal impact of their research.

The site visits were organized in September and October 2015. During the site visits, the panels were able to specify and expand their knowledge of the research activities in the university by interviewing a sample of researchers representing the various phases of a researcher's career. All in all, the panels interviewed a total of 142 researchers of the University of Vaasa during the site visits.

4 Reports from the peer review panels

The primary task of the panels was to provide the University with an objective evaluation on the quality of its research activities in written form, followed by a given set of instructions. At the research group level, the panels were asked to give a numerical rating¹ and a written statement on four evaluation criteria: quality of research, researcher training, research environment and societal impact of research. The evaluation report was written in a structured form. Based on research group level evaluations, the panels were asked to give an overall evaluation of the research activities and quality of research at the scientific field at issue (Administrative Sciences, Business Studies, Humanities and Technology). Furthermore, the University Panel was asked to give an overall evaluation of the research activities and quality of research at the University of Vaasa and recommendations for future development.

¹ **The following rating scale was used in the numerical rating of the quality of research:**

7 The majority of the submitted works are at a high international level and virtually all others at a good international level.

6 At least one third of the submitted works are at a high international level and many others at a good international level, these together comprising a clear majority.

5 The majority of the submitted works are at least at a good international level and virtually all others at a fair international level.

4 At least one third of the submitted works are at a good international level and many others at a fair international level, these together comprising a clear majority.

3 The majority of the submitted works are at least at a fair international level.

2 A minority of the submitted works are at a fair international level.

1 None, or virtually none, of the submitted works are at a fair international level.

The following rating scale was used in numerical rating of researcher training, research environment and societal impact of research:

7 Excellent

6 Very good

5 Good

4 Average

3 Somewhat below average

2 Fair

1 Poor

4.1 University Panel

The University Panel constituted a university level evaluation based on the work of the three discipline-specific evaluation panels.

Chair:

Mr Matti Sintonen, Professor, University of Helsinki, Finland

Panel members:

Mr Juha Kinnunen, Director of the Health Care District, Central Finland Health Care District, Finland

Ms Anne Kovalainen, Academy Professor, University of Turku/Turku School of Economics, Finland

Mr Jovica V. Milanovic, Deputy Head of School & Head of Electrical Energy and Power Systems Group, University of Manchester, UK

Ms Liisa Tiittula, Professor, University of Helsinki, Finland

4.1.1 University level evaluation

The University Panel was asked to assess the research activities and the quality research at the University of Vaasa between 2010 and 2014, as well as to provide recommendations for future development. More specifically, the evaluation has the following objectives (Terms of Reference, 1):

- To evaluate the research activities and the quality of research with regard to the international level of research in the field
- To develop the research activities of the University
- To offer the University the opportunity to receive international feedback on its research
- To identify the research groups that are currently carrying out research on a high scientific level or are potentially leading to outstanding results in the future

To carry out the evaluation the three international panels were asked to conduct desk research based on the background material provided by the Secretariat, under the supervision of the Rector and the Steering Group (Terms of Reference, 3.3) as well as to perform site visits and carry out interviews arranged by the Secretariat. The joint Administration Sciences and Humanities Panel made its site visit to the University on September 27-30, 2015, the Panel of Business Studies on October 25-30 and the Panel of Technology on September 27-30. Whereas the previous evaluation of the period 2005 – 2009 focused mostly on the level of departments, faculties and the University, the evaluation of 2010 – 2014 was carried out on the levels of research groups and the University. The rationale for this shift of focus no doubt was the University's strategic focus on improvement of the quality of research and research training, as well as the recommendations made by the previous University Panel.

The University Panel of 2010 noted that, despite a number of good elements in the University Strategy there were some bottlenecks that hampered the realization of these strategic goals. The first overall observation noted by the 2010 Panel was that the research activities of the University in 2005-2009 were split into a number of very small units and that they were occasionally based on the work of a single professor or researcher. As a result there was some lack of coherence and loss of potential that a cooperative academic 'college' might produce. The Panel recommended structural changes and a reassessment of the University's research and research management policy.

The current University Panel notes that significant progress has been made since the 2010 evaluation. University of Vaasa is a "business oriented university", and it has a clearly defined strategy in the University documents with four focus areas for their research and a set of measures to follow up the performance. In general terms the strategy for Vaasa University is well formulated and described in their strategy document though it appears that at some lower organisational level this strategy is not equally well understood. The University vision states what the University aspires to achieve and where they want to position themselves. According to this vision the University is not just business oriented, i.e., oriented towards helping local and national businesses to develop and prosper, as generally understood e.g. on the faculty level, but also internationally and nationally recognized institution of research and education that produces as its graduates internationally inclined experts and leaders. On the research side the Vision is to produce new knowledge for

managing organisations and process as well as to develop up-to-date sustainable operating models. The University also has an ambitious programme describing how to fulfil the strategy and how to manage and control their business and to stimulate a development in line with the strategy.

Compared to earlier (2005-2009), University of Vaasa has focused on four themes or focus areas, viz., energy, finance, management and multilingualism. It now has sixteen formally recognized research groups whose performance is monitored annually. In line with the recognized national and international trends in research and knowledge production overall these groups are thematically focused and oriented towards problem solving, and they are expected to engage in multi- and interdisciplinary collaboration, as was emphasized by the 2010 Panel: "Also in this context alone, research teams covering several fields may be more productive than one in a single academic field or 'unit'."

University of Vaasa developed from the School of Economics and Business Administration, with a strong emphasis on education. High quality education still is high among the strategic goals of the University, but the new Strategy puts emphasis on quality of research as well as on internationalization of research and postgraduate education.

The University Panel wants to highlight that there have been a number of developments in national and international higher education policies that affect the way University of Vaasa could or should position itself. One of these developments has to do with the almost perennial need to find a balance between academic excellence and societal relevance. The current trend seems to be towards increased societal relevance, as is seen in the emphasis on the need of research communities and units, from the STEM sciences to the Humanities, to address the so-called Grand Challenges.

Secondly, increasingly much funding is directed towards multidisciplinary and interdisciplinary research, since many of the phenomena can only be approached through collaborative interaction by researchers with differing and complementary expertise. For partly these reasons many nations or national and European funding institutions have established new forms of funding for so-called strategic research. A good example of this is the Academy of Finland Strategic Research Council which makes calls in accordance with strategic themes and horizontal focus areas. It is important to identify and recognize these new trends. They have often been seen as threats to bottom-up research initiatives, however, but the University Panel sees them also as opportunities since these new trends support the University's strategy to collaborate closely with industry as well as with national and regional communities.

Thirdly, there has been a remarkable change in the relationships between universities and higher education institutions in general. They are now strongly encouraged, if not forced, to compete with each other for diminishing resources. But competition is also accompanied with cooperation, and the Panel wishes to point to the increased need for national and international networking. It is vital for all universities but the smaller ones in particular to seek company and establish networks with units with similar profiles.

A fourth observation is that the Finnish universities have adopted a new way of incorporating and institutionalizing, at least in part, academic quality and scientific impact of publications. This rating system, known as JUFO (for Julkaisufoorumi, Publication Forum) ranks publications in accordance with the journals in

which they are published. The University Panel agrees that one way of improving research performance is to encourage publishing in the higher rated journals (JUFO2 and especially JUFO3) and to discourage publishing JUFO0 publications. However, although this rating system guides towards better publishing it is unjust to those research areas where no JUFO3 publications have been determined. The Panel also notes that publication cultures vary notably across different fields, which is why bibliometric analyses were only provided for the fields of Business Studies and Technology.

As to research training, compared to the earlier evaluation the University has established a graduate school which helps it to focus, in a coordinated manner, on graduate training. However, there seems to be gaps between the strategy/vision of research training and the reality with respect to recruiting graduates, their supervision, as well as the way in which the work within the graduate school is organized and implemented. The more detailed observations of the University Panel vis-à-vis research training will be in sections to follow.

As regards interaction with the society, University of Vaasa is in an almost unique position. Considering the geographical location of the University on the west coast of Finland and close to Umeå, culturally exceptional bilingual environment, international economic dynamics on the region, interaction and co-operation with society is very important and even crucial for the University. The risks of not fulfilling University strategy to be a business oriented university that serves local and regional communities, and to have a notable impact nationally and internationally, increase if there is too much or exclusive emphasis is placed on increasing the number of highest quality research publications (number of JUFO3 papers) in all areas of faculty activities.

Assessment of the research activities 2010-2014 - Overall evaluation

Based on research group and field level evaluations, the University Panel has been asked to give an overall evaluation of the research activities and quality of research at the University of Vaasa. In particular, the University Panel was asked to address the following questions:

How well have the strategic objectives for research as defined in University strategies been achieved so far? Which research groups are clearly carrying out research on a high scientific level? Which research groups are potentially leading to outstanding results in the future?

University Panel is also asked to provide recommendations on the future development of the university's research activities as a whole.

In addressing the questions above, The University Panel wishes to make it clear as to how it understood questions 2 and 3:

- 2. Which units are clearly carrying out research on a high scientific level?*
- 3. Which units are potentially leading to outstanding results in the future?*

According to the Panel the research groups in category 2 are on a high international level, whereas those in 3 are not only on a high international level but are the University's best or most promising groups in that they have the potential for outstanding results in the future.

How well have the strategic objectives for research as defined in the University's strategies been achieved so far?

Vaasa University has described its strategic goals in a vision-based manner. It is business oriented, i.e., oriented towards helping local and national business to develop and prosper. The strategic goals are defined on the areas of research, research training, societal interaction, and management, personnel and finance. The objectives for each area are clearly defined, although, due to heterogeneity and varying size of the units the vision or these objectives are not always clearly understood at all organizational levels. The University aspires to be an internationally and nationally recognized institution of research and education that produces recognized experts and leaders. We shall discuss each one of the areas below, but want to point, already before this more detailed examination, to the need to clarify some aspects. Most crucially, the Panel thinks that the University should position itself in national and international environments more clearly and be very explicit with regard to what is meant by a "business oriented university" statement in its strategy document.

Research

Research and postgraduate education will become more international.

The national share of the University in postgraduate education, international publication activity, and research funding of all fields will increase.

The best research groups will reach a high, internationally recognized, standard.

This will be realized through research groups, graduate schools, the tenure track model, and publication activity.

The Panel notes that a new focus on research groups (RG's) has evolved after the 2010 evaluation. This has brought in new challenges, part of these challenges were also articulated in the interviews during the site-visits. The 2010 Evaluation Panel addressed the question of whether the departmental structure was the most effective way of implementing the strategy of the University, as the departments were small and the Faculty of Business, when measured by international standards, is relatively small. The 2015 Panel found that some of the research groups that were small-in size partly functioned in silos.

The panel has recognized that the size and leadership of a research group is crucial for its performance and development. Merger of smaller research groups into a larger one would allow the University to select or recruit strong dynamic academic leaders and hence to ensure the future success of the group and to foster a stimulating research environment.

The development of the research groups was suggested in 2010. Further, the 2010 evaluation recommended that to ensure the mobility and exchange of ideas and collaboration across research groups, individual researchers could belong to several research groups. During the site visits the panels, however, failed to find this type of collaboration between research groups. On the contrary, it seemed that e.g. teaching was done

separately in RGs with no genuine collaboration across the RGs. This may endanger sufficient resource exchange and hamper the exchange and development of new ideas. Indeed, if RGs compete over scarce resources, they will not have possibilities to develop to the high international level, to which several of the RGs currently are close to.

In some cases the panels found evidence of lack of collaboration even within a research group. One panel identified a group that does not have a research programme, in the strict sense of the word, at all. Rather, the research group was an umbrella which covered many topics and was thematically excessively broad. The research is carried out in several teams organized around specific subject areas and there was little or no co-operation between the different main fields. The researchers perceived the research group as a top-down superstructure, and at present they considered it wise not to go too far into enforced interdisciplinarity but rather to retain the multidisciplinary and polyphonic outlook. Although there might well be synergies and more stable forms of collaboration within such a group in the future, the Panel feels that this is not the best way to make the resources function efficiently. A formal procedure should be in place to ensure that the RGs do not become silos in their research and teaching activities.

The Panel recommends that the use of JUF0 classification of publications as criterion for deciding on personal reward (bonus) given to individual academics is revisited as other more widely accepted international Journal classification systems exist. The JUF0 classification, for example, does not take into account the various business studies journals in comparison to the more sophisticated international ranking systems. As internationalization is an important aspect of University strategy, respecting other, more globally recognized, rankings could encourage joint publications with international partners

Research training

Postgraduate education will become more international.

The national share of the University in postgraduate education will increase.

This will be realized through research groups, graduate schools and the tenure track model.

The activities and resources of the Graduate School will be established. The University will participate in national and international graduate school programmes. The Graduate School will develop the recruitment of postgraduates, the effectiveness of thesis instruction process, and the international and working life skills of the postgraduates

A Graduate School has been introduced at university level following the recommendations of previous research evaluation panel and this is clearly the step in right direction. Research training is organised at different levels: by the Graduate School, the doctoral programmes and the units. The role of the research groups in the researchers training, however, is unclear. The groups may need to be more systematic in offering and conducting the research training as well as in introducing training and mentoring for supervisors, including more interaction and collaboration with international scholars. In the recruitment of doctoral students some considerable progress has been made, although in some research groups it is still very narrow and local.

- *The Panel recommends the allocation of longer term grants (two plus two years) by Graduate School for doctoral studies to improve recruitment and efficiency of doctoral studies.* This is particularly important for smaller research groups which are much more dependent on centralised sustainable funding of doctoral studies to be able to grow and develop in line with the university strategy.
- *The panel also believes that more systematic, faculty level tracking of progress of doctoral studies may be needed, as there are currently very diverse practices across the university.* Some research groups have a procedure in place, while the others do not have any systematic follow-ups.
- In some fields the international mobility in terms of staff and student exchange is very low. *The Panel strongly recommends the development of a clear strategy and programme for internationalisation and dedicated support for the mobility of young researchers, both academic members of staff and students.*

The University Panel of 2010 pointed out the importance of a clear career development plan. The University has adopted a four-staged research career model. The tenure track opportunity for doctoral students seems, however, to be unclear, and the postdocs are often employed as university teachers.

- The Panel recognizes the effort made in this respect over the past five years and recommends further development of the tenure-track model for academic career paths in particular.
- The Panel also recommends the University to develop and implement career coaching and planning as part of the doctoral studies for all current doctoral students, and to implement a similar scheme for post-doctoral researchers and young academics, i.e., for everyone below the rank of a professor, in order for them to make realistic career plans considering the tightening funding available in the future.

Interaction with society

The Panel observed that, due to geographical and cultural reasons, Vaasa University has been very strong in its interaction with the society.

- *The Panel recommends that in the strategy of the University balance should be shifted from international scientific expertise towards regional and national relevance and leadership.*

There are many strong arguments for this. First of all limited human and economic resources enforce researchers, no matter how talented they are, to divide their time and energy between teaching, research and administration. Those realities prevent to a certain extent their international exchange activities and hamper their international academic careers if strategic and more centralized planning of these activities is not undertaken. On the other hand the University produces high quality graduates and experts for regional and national industrial work force. The University is very active in general in transferring knowledge to the wider society. This important activity is realized through media coverage, the strategic network, local and regional networks, cooperation with schools and institutions of higher education, alumni activity, and the Levón Institute.

The Panel strongly recommends that the University maintains and further improves its already significant collaboration with regional businesses at all levels, private public, etc. Collaboration with national and

international businesses, in particular, is strongly encouraged as well as striving to attain a preeminent position as a regional University with a clear focus on facilitating regional industry growth and competitiveness at national and international levels.

Management, personnel and finances

The University's management system, resource planning, and quality assurance will ensure productive activity of high standards.

Efficient administration will support research and education.

As an employer, the University will invest in communality and the personnel's expertise by following democratic and equal principles.

This will be realized through the resource planning system, merit pay, personnel's participating possibilities, internationalisation, the learning environment, the university brand, and cooperation with the University of Applied Sciences.

The University strategy emphasises the importance of the governance structure, its predictability and several other aspects relevant for the good governance. At present, the governance from the university concerning the management and resource planning but also other aspects stated in the strategy text seems to end at the faculty level. The research groups seem to work in a very differing ways. While this is understandable, given the difference in the size, composition and field of work of the research groups, it may create challenges in the future when the overall funding is fluctuating and practices differ. The Panel finds that the roles and positions of departments vis a vis research groups are not clearly stated in university documents. For the size of the Vaasa University, some of its units are too small to define their own governance and control.

- *The Panel recommends that the governance at the university level is streamlined and simplified. The streamlining of the governance should result in a less complex organization and in better control of and communication with the research groups and their developments over time.*

While at present some groups do function as research groups there are groups that are organized around individual professors and are limited in size. Such groups are more like a collection of small research teams of individual professors that do not collaborate. If there are to be genuine research groups every effort should be made to ensure the cohesion and the collaboration between the members of research groups, and also between groups, e.g. in teaching activities. Research group should have a common research and development vision and shared strategy. The overall governance needs also a clear exit strategy for research groups. It should specify when does a research group get dissolved or when it needs to be divided into several smaller research groups if it becomes too large. How and in what circumstances can a new research group be established, etc.

The previous University strategy has put emphasis on enhanced resource capabilities, greater internationalization and also on increasing mobility, to mention the most important ones. There is substantial work done at the University level to achieve some of these goals. This is undoubtedly systematic work of the management of the University. The Panel notes that advancement in all three areas has also taken place at the Research Group level in many, but not all, research groups. It is difficult to trace down the exact reasons for why greater internationalization or increasing mobility have not found their way to the workings of the research groups. There may be several reasons, which need to be strategically thought through by the University management. The size of the research groups may be one thing, the difficulty in some sub-fields to find best publication outlets may be another hampering reason. The internationalization of the Faculty members can range from the usual conference participation and joint publishing to organizing international conferences, coordinating international research projects, acquiring visiting positions abroad and hiring internationally.

It seems that the current resource allocation mechanisms have not been fully developed other than at the individual bonus level, and RGs have varying practices in place on how the resource allocation takes place. Furthermore, the individual bonus system does not take into account activities other than research publications.

- *The Panel strongly recommends that the University maintains and further improves its already significant collaboration with regional businesses at all levels, private public, etc. Collaboration with national and international businesses, in particular, is strongly encouraged as well as striving to attain a preeminent position as a regional University with a clear focus on facilitating regional industry growth and competitiveness at national and international levels.*

Which units are clearly carrying out research on a high scientific level?

Deliberative Welfare Policy Management Research Group

The university level panel noted that Deliberative Welfare Policy Management Research Group represent the research activities that are currently carrying out research on a high scientific level. The profile of the research group fits in well with the business oriented strategy of the University. The focus on the notion that deliberative processes are particularly relevant and fruitful in complex decision-making situations is, if not completely original, nevertheless highly topical and well-developed vis-à-vis the chosen problem area. Here the group is clearly contributing to the theoretical and methodological development at an international. There is evidence of increasing activities in international publishing activities JUFO 2-3 journals.

The research group has clear impact on its own field nationally and could have also stronger contribution by increased activities on the international level. Researchers' training in the research group seems to be on a good level Societal impact is very strong locally regionally and nationally. The researchers have exceptional

involvements in different kind of projects and their contribution as experts is widely recognized and used in development activities and policy formulation in organisations, municipalities and national law drafting. Considering planned reforms in terms of totally new independent regional authorities, it means massive changes in integrated social and health care policy, role of municipalities; role of citizens in digitalized the welfare system. These are all topics which the DWPM group has been developed in miniature scale.

Practices and Discourses of Management

The research group was established in the middle of the assessment period in 2012. It unites four teams from social sciences, communication studies, and language studies. Although not yet well integrated as an interdisciplinary research group, it has a potential for new interdisciplinary openings. It deals with two central, societally relevant issues: research into ethical management practices with considerable relevance for the public as well as the private sector, and research into multilingual practices in companies, organisations and services. The research conducted has an impact on social and economic activities, very much in line with the business-orientation of the university.

Which units are potentially leading to outstanding results in the future?

The University Panel identified three groups that harbour particularly strong potential for future research, the Human Resource Management Research group, the Finance and Financial Accounting Research Group, and the Networked Value Systems Research Group. Whilst picking out these groups as potentially leading and outstanding research groups the Panel makes the same reservations as above in Section 2: many of the groups are varied in profile, they are of different shapes and sizes, and they may excel in different ways.

Human Resource Management Research Group (HRM)

The research group in HRM – Human Resource Management RG - follows and fulfils the University strategy in internationalization, impact and well thought career planning for younger scholars. The group has a distinct research strategy, with three separate strands of general topic areas. These topics are separate but connected, and these connections are kept alive through several means, which work against the silo-effect. The topics: International HRM, Strategic HRM and Leadership differ slightly in size and seem all be very active and dynamic. The research group demonstrates strong scientific impact through a large number of national and international projects, publications in a large number of highly ranked peer-reviewed journals, and an impressive awards/citation list. The group is working with key scholars both in Finland and abroad, so they can learn from each other and share best practices, and it aims to be working more intensely and with a more extensive group of them in the future. Overall, the group is at the high international level.

Finance and Financial Accounting Research Group (FFA)

Finance and Financial Accounting Research Group is a larger group than some of the other research groups investigated during the site visit. The size has worked for the benefit as the high quality publications are the key strategy of the research group. FFA research group has a clear sense of purpose concerning research, uses good data bases and focuses on top quality publishing. The evaluation site-visits suggest that the group also attracts good quality research students, both nationally and internationally, hence international recruitment is part of the research group's strategy. The best possible outlets are used for publishing of results and research group is performing solid, high quality research published in the 1. and 2. tier top journals. The group is well networked across different institutions abroad. The group may need to give special attention to the size of the group and the managerial issues growth may bring along to the functioning of the group as research group.

Networked Value Systems Research Group (NeVS)

This is a large and well-established research group, with a good level of external competitive research funding and very good research output. The research is well positioned both nationally and internationally with three interconnected research areas: New product development, Order fulfilment and Service business. The research group has collaborations with a wide range of small and large companies, many of which host multiple research projects which involve master students, PhD students and senior researchers. Among the research groups, NeVS attracted most foreign visitors to its projects, focused on publishing and also supervising. The NeVS- research group is performing very well and is on a good path to becoming an internationally recognised research group, thus in line with the University level strategy.

Recommendations for the future

Vaasa University aims at being an internationally and nationally recognized institution of research and education that produces recognized experts and leaders.

- *The strategic aims are clearly stated. Nevertheless the Panel recommends that a **clear statement should be provided with respect to the overall vision for the University of Vaasa and the quality of research that the University is aspiring to achieve.*** It might be very difficult and possibly contra productive for the University of Vaasa to try to compete with top level international universities in terms of quality of research due to lack of funds, size/capacity and attractiveness for the excellence from abroad. This situation is not likely to change within next 5-10 years. A change in vision and priorities would probably translate in other **goals** for strategy, publication policy, international/national collaboration, etc. Clearly defined vision and priorities would also help lower level organisational units (faculties, departments, research teams/ groups) to find the appropriate balance between a focus on top level journal publications (e.g. JUF03 level or equivalent) and active involvement with and leadership in the regional industrial development and applied research.

The Panel also observed that the governance from the university seems to stop at the faculty level. For the University of its size some units are too small to define their own governance and control. **The governance at the university level therefore should be streamlined and simplified.** The streamlining of the governance should result in a less complex organization and in better control of and communication with the research groups and their development over time. While at present some groups do function as research groups the others are more a collection of small research teams of individual professors that do not collaborate. If there are to be research groups every effort should be made to ensure their cohesion collaboration between their members and common research and development vision and strategy.

The University Panel noted with satisfaction that a Graduate School has been introduced but notes that the way graduate training has been organized is somewhat unspicuous and that the roles, duties and responsibilities of those involved should be more clearly defined. Research training is organised by the Graduate School, both at the doctoral programme level and at the unit level. The Panel already observed that the role of the research groups in the researchers training is still unclear.

- *As a general recommendation the Panel suggests a more systematic way of organizing research supervision.*

There are also some weaknesses in the mobility of graduate students as well as with the degree of interaction with international scholars.

- *The Panel urges the University to try and establish systematic connections with national and international institutions with similar interests and profiles.*
- *Furthermore, the Panel suggests that recruiting doctoral students could be organized in more systematic and spicuous manner and not to be based on often narrow and somewhat local interests.*

The Panel urges the University to try and establish systematic connections with national and international institutions with similar interests and profiles. Furthermore, the Panel suggests that recruiting doctoral students could be organized in more systematic and spicuous manner and not to be based on often narrow and somewhat local interests. The Panel also found that the status of many graduate students is unclear. This is mainly due to the funding mechanisms for the doctoral students, as a great number of doctoral students are enrolled on a part-time basis.

- *The Panel suggests a more systematic way of tracking the progress of doctoral students as well as more systematic provision of feedback.*

Although there are separate reports provided by the three Panels (Administrative Sciences and Humanities, Business, and Technology) the University Panel also wants to point out to some highlighted recommendations in these fields.

- *On the Humanities side the Panel suggests a stronger emphasis on the increasingly important role of multilingualism and multilingual communication.* The panel also notes the relatively low amount of external funding obtained within the field of Humanities, and recommends continued efforts to apply for external funding from national and European sources. One possible way to improve the

situation would be to strengthen available language services and other forms of support for applicants. Another possibility would be to orient towards new sources of funding such as strategic research from the Academy of Finland Strategic Research Council and relevant European funding organizations. The panel believes that this would also be in line with the University Strategy which not only builds on a business-oriented approach but also emphasizes the importance of close connections to societal interests.

- *On the side of the Administrative Sciences the Panel recommends a better use of the multidisciplinary environment.* There are unrealized possibilities of cooperation between groups within the field of Humanities but also in other fields represented at the University.
- *The panel recommends strengthening the field's international position and visibility by enhancing mobility and by opening more systematic and transparent avenues for longer-term visits, and by encouraging both junior and more senior members to establish long-term partnerships with foreign universities and research institutes with similar research profiles.*
- *With regards to Business Studies the Panel recommends merging some small groups in bigger ones, to ensure a more efficient and less vulnerable research environment.* At the same time collaboration within and between research groups should be encouraged. Crucial for success in Business Studies and elsewhere will be how leadership of research groups is organised so as to make the most of the available resources. It seems that the resource allocation mechanisms have not been fully developed other than at the individual bonus level, and RGs have varying practices in place on how the resource allocation takes place.
- *The Panel recommends the University or Faculty level transparency in resource allocation: thus PhD student and post-doctoral researcher would receive the same budget, irrespective of the RG.*
- *In the Field of Technology, the Panel follows the recommendation of the Technology Panel to merge smaller research groups into a larger ones as well as to endorse the business oriented university strategy by emphasizing the importance of local and regional engagement with community and businesses.*
- ***Finally, the Panel strongly recommends the University to appoint an Advisory Board which could help the rector and the University senior leadership team in steering the University in the future.*** The Advisory Board should comprise a group (e.g., 2-3 representatives per global research area) of internationally and nationally leading academics and industrialists from different areas of the University's activities.

4.2 Panel of Administrative Sciences and Humanities

The Panel of Administrative Sciences and Humanities evaluated research activities of the three research groups of the scientific fields of administrative sciences and humanities.

The units of assessment:

- Deliberative Welfare Policy Management
- Practices and Discourses of Management
- Social and Cultural Phenomena

Chair:

Mr Juha Kinnunen, Director of the Health Care District, Central Finland Health Care District, Finland

Panel members:

Ms Heidi Hansson, Professor, Umeå University, Sweden

Ms Godelieve Layreys, Full Professor, Ghent University, Belgium

Mr Rune Premfors, Professor Emeritus, Research Director, Stockholm University, Stockholm Centre for Organizational Research (SCORE), Sweden

Ms Liisa Tiittula, Professor, University of Helsinki, Finland

Joint member:

Mr Matti Sintonen, Professor, University of Helsinki, Finland

Site visit 28.-30.9.2015

4.2.1 Evaluation of the scientific fields of Administrative Sciences and Humanities

Research activities

Numerical Rating: 4

Two of the three research groups (Practices and Discourses of Management and Social and Cultural Phenomena) belong both to the Field of Humanities and the Field of Administrative Sciences. Since their groups overlap the two fields it is difficult to assess their research activities independently of one another. The Deliberative Welfare Policy Management research group mainly belongs to the field of management sciences, even though the team of public law researchers has a broader range of social science interests.

The panel observed that the groups within the field of humanities are somewhat heterogeneous in their research activities. Teams focusing on administrative sciences seem to be more homogeneous. Topics such as human rights, the role of citizens and their participation in the administrative systems, good administration and ethics, complexity and hybrid organisations belong to the research themes of both the DWPM and the PDMS research groups. The same is true of classical topics concerned with intra-organizational phenomena such as management and leadership. All three groups have a fair presence internationally when it comes to participation in scientific conferences, expert assignments, review assignments etc. Similarly, scholars within the field are well-connected and are active in national and international research networks. Since the evaluation performed in 2010 the groups and teams within the field have managed to increase the number of co-authored publications. Yet the panel observes that mobility, both shorter and especially longer term visits to universities and research centres with similar profiles is low. Likewise, the number of scholars and scientists visiting Vaasa is at a low level.

The organization of research into research groups has had a positive effect on research activities within these fields. Many of these activities address issues that are of particular relevance for the Finnish research community and the society at large. The panel notes that the amount of external funding from domestic sources, from private foundations in particular, is at a satisfactory or even good level among some of the groups. However, funding from the Academy of Finland and from European research funding organizations is relatively low.

Quality of research

Numerical Rating: 4-5

The research conducted in the research groups is solid and relevant to the different fields in terms of core subjects. The panel notes that research activities are organized within teams, and that some of them basically correspond to subjects (in the more traditional sense), while others are organized in a more interdisciplinary

fashion. The interdisciplinary approach is primarily to be found in the language subjects and communication studies, and to some extent within welfare policy and public law.

The organisation into research groups has made it possible to build up further collaboration and discover novel approaches within well-established research lines. Much of this research focuses on societally relevant issues such as research into multilingual practices in companies, organisations and services.

The quality of publications within the fields varies from one research group to another, but is generally on a good international level. Most of the publications are scientifically relevant and some have considerable societal relevance. A considerable number is in English (some in German) and have been published in international and national peer-reviewed forums. However, some papers are published in Finnish or Swedish due to their specific relevance for the Finnish or Scandinavian research communities. The panel notes that particularly strong areas in the humanities field include language learning and immersion, terminology and communication in organizations. Some observations can be made vis-a-vis the publications produced in the research groups that are common to the Fields of Administrative Sciences and the Humanities. The proportion of publications within the higher JUFO categories published by the humanities scholars is particularly high in the Social and Cultural Phenomena Research Group. The panel notes that all groups have clear targets that encourage publishing in the higher JUFO categories. The publishing profile of the research groups has thus improved during the evaluation period.

Recommendations for the future

The field of Humanities

The Panel recommends a more pronounced emphasis on the increasingly important role of multilingualism which would entail shifting the focus from the study of bilingualism to multilingual encounters. This could be realized through studies of multilingual communication in organizations and communities. Likewise, continued attention should be given to language learning and acquisition: this would mean an expansion of the scope of research both in terms of number of languages, different settings, and different age groups.

The field of Administrative Sciences

The topics of the research groups within the field administrative sciences are relevant. The panel also notes with satisfaction that researchers on public management and social and health policy and management in Vaasa University have found an original niche, at least as far as the Finnish research community is concerned.

The following three areas might be fruitful for the research groups DWPM and PDMS:

- 1) Digitalisation and virtual services in all sectors of public administration will change the roles and responsibilities of citizens and customers. The research groups have a good theoretical and methodological readiness to analyse the influence, risks and consequences of these developments.

2) Global business and the increasing number of refugees will change work organisations in both the private and the public sector into multilingual and multi-cultural working environments, which will create challenges for management, job design and internal and external communication. All research groups have competences to contribute to an increased understanding of these issues. 3) If the national government succeeds in reforming social and health services according to its plans we are witnessing one of the biggest political and administrative changes for a century. One key element is the integration of the social and health policy organizational structures within regional administrative entities and the diminishing role and responsibilities of municipalities. This reform would provide an endless source of topics for the DWPM and the public management research teams.

The panel also recommends a better use of the multidisciplinary environment. There are unrealized possibilities of cooperation between groups within the field of Humanities but also in other fields represented at the University.

The panel recommends strengthening the field's international position and visibility by enhancing mobility and by opening more systematic and transparent avenues for longer-term visits, and by encouraging both junior and more senior members to establish long-term partnerships with foreign universities and research institutes with similar research profiles.

The panel also notes the relatively low amount of external funding obtained within the field of Humanities, and recommends continued efforts to apply for external funding from national and European sources. One possible way to improve the situation would be to strengthen available language services and other forms of support for applicants. Another possibility would be to orient towards new sources of funding such as strategic research from the Academy of Finland Strategic Research Council and relevant European funding organizations. The panel believes that this would also be in line with the University Strategy which not only builds on a business-oriented approach but also emphasizes the importance of close connections to societal interests.

4.2.2 Deliberative Welfare Policy Management Research Group

Quality of research

Numerical Rating: 5

Scientific relevance and impact

The profile of the research group fits in well with the business-oriented strategy of the University. Deliberative welfare policy and management delivers an important contribution to the strong management focus, specializing in policy and management problems as well as in phenomena in social and health contexts. The notion that deliberative processes are particularly relevant and fruitful in complex decision-making situations is, if not completely original, nevertheless highly topical and well-developed vis-à-vis the chosen problem area. Here the group is clearly contributing to the theoretical and methodological development at an international level.

The theoretical and empirical ideas of complexity, wicked problems and deliberative democracy approaches also refresh debates about social and welfare policy in Finland. It has relevance on the international level as well since there is increasing interest particularly in well conducted empirical studies on the topic. The panel considers that combining social and health administration research with that of public law is theoretically and methodologically interesting and well-grounded. Even though the research group is young and its size limited, the progress has been good. There is evidence of increasing activities in international publishing in JUFO 2-3 journals. However, the panel notes that the number of publications at the highest level is still quite limited. The research group has a clear impact on its own field nationally but could make a stronger contribution by increased activities on the international level.

Flexibility and dynamics in the research group seems to be good. The lack of critical mass, however, hampers the group's aims to reach academic excellence in international terms. The balance between the different roles of the senior and junior researchers is not always optimal. Teaching, administration and other necessary activities in academic life leaves limited time and energy for ambitious research.

Researcher training

Numerical Rating: 5

Researchers' training in the research group seems to be on a good level. The total number of active PhD students is relatively low, but the way research training is organized is quite satisfactory and the number of doctoral degrees has been steady during the period of evaluation. Considering the official target the research group has been productive and has even surpassed the goal. The group is able to attract more young students than they can accept into the PhD programme.

The doctoral programs together with the graduate school offer a sufficient number of theoretical and methodological courses. Supervision for the doctoral theses is good for full time students. A relatively high number of part time students create a challenging situation in balancing support and supervision between different kinds of students. It is not clear to the panel that the duties and expectations of the students and the supervisors always meet.

The role of the research group in researchers training is unclear. On one hand the group found positive influence by tangible theoretical and methodological approaches of public law and social and health policy and management. On the other hand the researchers' training seems to happen in research teams on the one hand and in in different kind of networks inside and outside of the university on the other. The number of the networks and their role might need critical analysis and simplification.

Research environment

Numerical Rating: 4

A distinct problem is international mobility in terms of exchange of researchers and doctoral students. The reporting criteria might mean that visits shorter than a full working week go unreported, and new types of interaction, such as virtual channels, are also not included in the self-evaluation. Nevertheless, the low activity rate in this regard cannot go unremarked.

The researchers in the group are active in national academic cooperation. They are involved in several multi-unit research projects and researchers from the DWPM group are coordinators in a remarkable seven out of eight projects listed in self-evaluation material. There are also international network activities, but as mentioned above, activities of the group are heavily oriented towards national networks.

The challenges in internationalization are well recognized in the group and the issue has been described and discussed in the material and during the panel visit. The group has plans to overcome this weakness in the coming years. For this to succeed, they need a systematic approach and explicit responsibilities when it comes to leading the process.

Societal impact of research

Numerical Rating: 6

The group's societal impact is very strong locally, regionally and nationally. The researchers are involved in different kind of projects to quite an exceptional extent and their contribution as experts is widely recognized and used in development activities and policy formulation in organisations, municipalities and national law drafting.

Planned reforms in terms of totally new independent regional authorities, means massive changes in integrated social and health care policy, the role of municipalities and the role of citizens in implementing the

welfare system. These are all topics which the DWPM group has developed at a miniature scale. It will take 5-10 years to implement the reform at the practical level and there will be a need for expertise on topics like complexity, wicked problems, and citizens as actors, as well as questions related to the legal status and power balance of independent authorities.

The research group has adopted an activist strategy in the tradition of “action research”. They explicitly aim at testing in practice forms of deliberation as a means toward democratization and as problem-solving mechanisms. In doing this they develop their research data.

It is a demanding strategy and it is essential that the team while pursuing it will find the time and energy for reflection and theoretical development. It seems to us that the group has so far mastered the difficult task of balancing action and reflection, but there is a constant challenge not the least in terms of available resources.

Overall rating of research group

Numerical Rating: 5

Panel’s recommendations for the future

For the research group

- The continuation of the DWPM research group is well grounded, but the possibilities to increase critical mass should be considered. Part of the team of regional studies would fit in nicely with this research group.
- Better interaction with public and private management groups might strengthen the research environment.
- A challenging task for supervisors is that of guiding doctoral students in striking the right balance between social activism and theoretical pursuits. Although that balance, as we have noted, is a general challenge for the group, it seems to be particularly important in training young researchers.
- The panel strongly suggests the development of a clear and realistic strategy and program for internationalization and dedicated support for the mobility of young researchers. In view of stable partnerships the international research units with the highest potential should be more selectively identified and approaches should show a more long-term, strategic vision.
- Positions for international doctoral students and post-doctoral researchers are needed.
- Reforms in national and regional welfare policy open new challenges for strategic research and funding, which should be supported.

4.2.3 Practices and Discourses of Management Research Group

Quality of research

Numerical Rating: 5

The panel finds that the research conducted in the research group is solid and relevant to the different fields in terms of core subjects. Most of the publications are scientifically relevant and some have considerable societal relevance.

The members of the research group underline the importance of international publications, but emphasise the conflict with the societal impact of their research, since they will not reach out to Finnish society by writing in English. The panel meets a reasonable and nuanced attitude in this matter and notices a rising curve with regard to international publications.

In general performance-based bonuses have affected publication strategies in a positive way, but opinions are divided about their direct effect in relation to the choice of relevant publication channels. Some members would prefer to have the bonuses allocated as working budget to be invested in the teams.

Members of the research group have a fair presence nationally and internationally when it comes to participation in scientific conferences, expert assignments, review assignments etc. The number of both long and short visits from and to Vaasa is below expectations, and the panel urges increased mobility to enhance the visibility of researchers and strengthen their scientific impact.

Researcher training

Numerical Rating: 4

The researchers are aware that the output in terms of doctoral dissertations and the number of postdocs is too low. To improve the output some advocate management by result on all levels.

The intake of doctoral students poses no problems, but the panel observes that PhD students are normally recruited by hand-picking, mostly among bright MA students already at Vaasa University. The panel finds the recruitment too narrow and too local, and believes that there are not enough guarantees in the long term for new research questions and methodological innovation. In addition, only few PhD students have stable funding. This leads to an inner and an outer circuit of students which poses some problems from an organizational perspective and also blurs the statistics about output and number of dissertations. Some researchers recommend that doctoral students without funding should either be removed from the statistics or earmarked. Some even advocate stricter conditions.

The panel notices the low level of mobility among the PhD students as reflected in the numbers in the self-evaluation, but learns that there is a discrepancy between the figures and the actual situation since PhD

students actually report spending part of their study time abroad. They ask for even more opportunities and support for international exchange.

PhD students are satisfied with the three levels of supervision (graduate school, research team and subject). They find the general doctoral courses offered by the graduate school useful, but point to the fact that some of the courses are overbooked. The panel has learnt from the supervisors that they are well aware of the problem and will suggest solutions. The PhD students ask for more methodology courses, especially as regards quantitative methods and solicit more courses to prepare for working life. They are satisfied with the administrative and logistic support and have also got funding for language checking.

In order to have a critical mass the research group organizes joint seminars. A system of co-supervising is introduced.

There is no clear career path for postdocs, who are often employed as university teachers. All the PhD students and postdocs, however, stated that they have ambitions to remain within academia. The panel thinks that the University should take initiatives to implement career coaching, e.g. by offering more courses in transferable skills and by helping with outplacement. The full implementation of the tenure track system would also create transparency with regard to career possibilities.

The panel notes that the PhD students and postdocs have not taken part in preparing the self-evaluation. They report a heavy workload with regard to teaching, organization of conferences and editing volumes and publications, but do not complain since they think it is an interesting experience that will turn out to be an asset in the future career. Nevertheless, they ask for more explicit rules regarding the volume of this work, since the demands vary between research groups.

Research environment

Numerical Rating: 5

The idea of a business-oriented university is well-integrated in the profile of the research group. The teams have quite recently been located under the umbrella of a new research group. Therefore there is a seeming lack of integration, but members of the group see good possibilities for future cooperation and will explore new potentialities. In particular, they consider that much of the languages and communication research as well as humanities research more generally conducted in Vaasa are relevant for management studies. Although the research group at present is experienced as a somewhat artificial top-down construction, members see potential interfaces. Members of the research group report that there was a growing awareness of such possibilities for interaction during the self-evaluation process. The strategic goal of the group indicates ambitions to become an internationally recognized multidisciplinary environment by 2020 and lists a number of strategies to achieve this goal.

The group has succeeded well in establishing national and international networks, and members play an active role in the academic community and society at large.

Members of the research group are aware of new opportunities in attracting external and strategic funding, which have already resulted in co-applications beyond the team level.

Societal impact of research

Numerical Rating: 6

The research topics of the teams have a direct societal relevance. Specific projects are run in collaboration with public sector, corporate and non-profit partners, such as the Ministry of Agriculture and Forestry, Transparency Finland, City of Vaasa and the Ostrobothnian Regional Council. The research conducted has an impact on social and economic activities, very much in line with the business-orientation of the university.

The panel is convinced that this research group deals with two central, societally relevant issues: research into ethical management practices with considerable relevance for the public as well as the private sector, and research into multilingual practices in companies, organisations and services.

Overall rating of research group

Numerical Rating: 5

Panel's recommendations for the future

Recommendations to the research group:

- Increased external funding is crucial
- Consider upscaling research projects in view of co-applications for strategic funding
- More ambitious publication strategies
- Review and clarification of the demands on PhD students in terms of workload
- More regular flow of doctoral students
- Enhance mobility

Recommendations to the university management:

- Be aware of the complexity and time-consuming nature of the multidimensional matrix organization
- Avoid new reorganizations in a short time period
- Create more possibilities for sabbatical leaves

4.2.4 Social and Cultural Phenomena Research Group

Quality of research

Numerical Rating: 4

The panel finds that the research conducted in the research group is solid and relevant to the different fields in terms of core subjects. Most of the publications are scientifically relevant and some have considerable societal relevance. The panel has noticed that there is a development towards more international publication channels. A considerable number is in English, but due to the specific national relevance of the research topics, some papers are published in Finnish or Swedish, which the panel fully understands and which does not impact on their scientific quality. One third of the listed works are at least at a good international level and many others at a fair international level.

The panel defines originality of research in terms of innovation with regard to method, theory, material or research questions. The organisation into research groups has made possible the further elaboration of well-established research lines as well as novel approaches. It seems as if the present cluster has been particularly beneficial for the ReACT team where it has promoted an expansion of the scope of research into language acquisition both in terms of number of languages and different settings and age groups.

The organization into research groups has had positive effects on the publication culture. In addition, the panel has learnt that the performance-based bonuses have been important incentives for researchers to seek more prestigious publication channels. As a result of these measures we can see increased publication in English, in international and national peer-reviewed forums and an increased number of co-authorships. In the opinion of the panel, the number of publications in internationally renowned peer-reviewed journals is still quite low. The panel is however well aware of the fact that some research results have special relevance for the Finnish research community and therefore are more appropriately published in Finnish (or when applicable, Swedish). A factor hampering publication in English is the relative lack of adequate language checking services.

Members of the research group have a fair presence nationally and internationally when it comes to participation in scientific conferences, expert assignments, review assignments etc. The number of especially long visits from and to Vaasa (more than 1 week) is low, and the panels holds that increased mobility would enhance the visibility of researchers and strengthen their scientific impact.

Researcher training

Numerical Rating: 4

The panel learns that PhD students are normally recruited by hand-picking, mostly among bright MA students already at Vaasa University. Students are recruited at the level of subjects and do not directly relate to the research groups as such. The panel finds the recruitment too narrow and too local, and believes that there are not enough guarantees in the long term for new research questions and methodological innovation. In addition, the panel expresses its concern for the virtual absence of both in-coming and out-going international mobility. The students report family-related and subject-related reasons for this lack of mobility, although neither reason seems convincing to the panel. The panel therefore urges the supervisors to actively encourage mobility among the PhD students.

Research training takes place at different levels and in different formats. The students are very satisfied with the scientific guidance and with the administrative support. They value the general courses offered by Vaasa Graduate School, although popular courses sometimes fill up very quickly. The students however show little awareness of the doctoral programme in languages and communication offered by the graduate school. The different subjects organize PhD seminars where work in progress is presented and commented upon and there is also regular discussion meetings organized within the different teams. There are no corresponding opportunities on the level of the research group. The students are satisfied with the frequency and quality of the supervision, which they report to take place on a continuing, nearly daily basis and is organic and informal. The panel notes that this supervision culture is suited to students who are employed by the university but may be less effective for part-time or extraneous students.

The added value of the collaboration between the disciplines is not obvious to the PhD students, who regard their academic biotope as the research team or the subject. The concept of a business-oriented university seems to primarily appeal to PhD students and postdocs in Translation Studies and Regional Studies. The panel notes that interdisciplinarity is not sufficiently supported since research seminars are mostly organized by the subjects.

A notable problem is the number of completed doctorates which shows that the research group has not met the target of 0.5 PhDs per year per professor. Lack of stable funding is reported to be the predominant factor. Nevertheless, the panel has an overall positive impression of the research training, but wonders whether there are too many levels where the students are expected to be active.

There is no clear career path for postdocs, who are often employed as university teachers. All the PhD students and postdocs, however, stated that they have ambitions to remain within academia, and preferably in Vaasa. The panel thinks that the University should take initiatives to implement career coaching, e.g. by offering more courses in transferable skills and by helping with outplacement. The full implementation of the tenure track system would also create transparency with regard to career possibilities.

Research environment

Numerical Rating: 3

There is no research programme in the strict sense of the word. The research group is an umbrella which covers many topics and is thematically broad, viz. “man, phenomena and the world.” The research is done in 6 teams basically corresponding to the subjects, and there is little or no co-operation between the different main fields of languages and regional studies. The researchers perceive the research group as a top-down superstructure, and at present they consider it wise not to go too far into enforced interdisciplinarity but retain the multi-disciplinary and polyphonic outlook. In time, they expect that the structure will provide synergies and open up for stable collaboration. At the same time, there are opposite tendencies, for instance an on-going discussion to divide the Vaasa Group of Textual Studies into the two dominant strands literature and culture on the one hand and translation studies on the other.

According to the self-evaluation the special value of the research group is that it combines the two areas of research in the Faculty of Philosophy, but the panel would like to see more implementation, e. g. visible impact on the organization of the research teams, seminars, research questions etc. At present it is not clear how the members are encouraged to embark on new border-crossing initiatives and new creative themes.

In line with the present organisation of research, networks and partnerships are established at team rather than research group levels. This means that they are also of a rather limited scope, involving primarily Finnish and Nordic partners. The amount of external funding needs to grow.

Societal impact of research

Numerical Rating: 4

The research topics of specific teams such as ReACT have a direct societal relevance. Research into language acquisition and specifically language immersion is not only relevant within the Swedish-Finnish bilingual context but increasingly within multilingual environments such as the industry and service sector – both in the Vaasa area and the rest of Finland – , in immigrant communities and in relation to the challenges connected to the increasing influx of refugees.

Research into the effects and opportunities of digital media, likewise, has a direct societal relevance. Less immediately visible, but not less important, is the societal impact of the critical study of social and cultural phenomena. The panel deplores that the inherent societal relevance of other research efforts is not highlighted in the self-evaluation

Some of the researchers are very media active and act as invited speakers at various events. An important venue for the dissemination of research results to a broader audience is also in-service training in companies and schools.

Overall rating of research group

Numerical Rating: 4

Panel's recommendations for the future

Recommendations to the research group:

- Strengthen the coherence of the research or make clearer the value of multidisciplinary and polyphonic approaches
- Reduce the number of teams under the research group umbrella
- Redefine the concept of the business-oriented university to give it a better fit with the humanities and then integrate the idea more explicitly in the research projects
- Continue efforts to apply for strategic money from e. e. the Finnish Academy and from European foundations
- Strengthen the group's international position by enhancing mobility

Recommendations to the university management

- The research group needs time and guidance to grow into the new organisational structure
- Refrain from reorganisations within a short time period
- The concept of the business-oriented university needs to be widened to give it a stronger appeal to the humanities
- Consider a systems of bonuses as investments into the research groups rather than individual bonuses

4.3 Panel of Business Studies

The Panel of Business Studies evaluated research activities of the nine research groups of the scientific field of Business Studies. One of the research groups is interdisciplinary and was evaluated jointly with the Panel of Technology.

The units of assessment:

- Auditing and Control in Accounting
- Business Law, Information and Knowledge
- Consumption Research and Customer Value Creation
- Finance and Financial Accounting Research Group
- Human Resource Management
- Intangible Capital Research Group
- International Business and Marketing
- Networked Value Systems²
- Personality Approach to Leadership and Organizational Behavior

Chair:

Ms Anne Kovalainen, Professor, University of Turku/Turku School of Economics, Finland

Panel members:

Ms Carla Millar, Professor, University of Twente, Netherlands

Mr Kalle Määttä, Professor, University of Eastern Finland, Finland

Mr Andrew Stark, Coumts Professor, Manchester Business School, UK

Mr Richard Wahlund, Professor, Stockholm School of Economics, Sweden

Joint member:

Mr Matti Sintonen, Professor, University of Helsinki, Finland

Site visit 26.-30.2015

² Networked Value Systems is a joint interdisciplinary research group of the Faculty of Business Studies and Faculty of Technology. Therefore this research group is evaluated jointly by the Panels of Business Studies and Panel of Technology. Panels will collaborate and produce one joint report on this research group.

4.3.1 Evaluation of the scientific field of Business Studies

The Field report addresses three key issues that have importance in the future orientation of the Faculty of Business studies. These three key issues highlighted in the report are: organizational structure and future solutions, career structure and career promotion among the junior academic faculty, and resource allocation and future reward systems within the faculty. All three issues extend beyond the faculty level to the university level.

Organizational structure

The Panel notes that a new focus on research groups (RGs) has evolved after the 2010 evaluation. This has brought in new challenges. Parts of these challenges were also articulated in the interviews during the site-visits.

The 2010 Evaluation Panel addressed the question of whether the departmental structure was the most effective way of implementing the strategy of the University, as the departments were small and the Faculty of Business, when measured by international standards, was relatively small. The 2015 Panel found that some of the RGs that are small in size partly functioned in silos.

The development of the RGs was suggested in 2010. Further, the 2010 evaluation did recommend that, to ensure the mobility and exchange of ideas and collaboration across RGs, a single researcher could belong to several RGs. During the current site-visit, the Panel did not find this type of collaboration between RGs. On the contrary, it seemed that, for example, teaching was done separately in RGs with no genuine collaboration across the RGs. This may endanger sufficient resource exchange and hamper the exchange and development of new ideas. Indeed, if RGs compete over scarce resources, they do not have possibilities to develop to the high international level where many of the RGs are close to currently.

Despite the similarity in topics taught, such as research methods, they are taught in parallel fashion. This is not the best way to make the resources function efficiently. A formal procedure should be in place to ensure that the RGs do not become silos in their research and teaching activities.

The Panel did not get a clear picture of how the resource allocation would take place if the Departments are abolished, and many and rather small RGs would function directly under the Faculty level: how are the resources between the RGs to be allocated in a transparent way to ensure critical mass and good collaborative possibilities between the RGs? The Panel has suggested several mergers between the RGs, so that the number of RGs would reduce from nine to four or five.

Career structure and career planning for junior academic staff

The previous evaluation Panel in 2010 did point out the importance of the junior staff careers as one potential source for the renewal of research and, essentially, as a part of systematic research training.

The 2015 evaluation Panel notes that some considerable steps have been taken with respect to the recruitment of doctoral students, and the creation of stability of funding for these students. More systematic, faculty level, tracking of PhD student progress may be needed, because, although some RGs do have a procedure in place, others do not have any systematic follow-ups on the progress.

As a further recommendation, Faculty level transparent procedures in career counselling and planning are advised as part of the Ph.D. studies and also for post-doc researchers, (i.e. anyone who has completed a PhD but is not a professor), in order for them to make realistic career plans and plan for the tightening funding available in the future. This procedure is encouraged to be adopted as a best practice also in other faculties.

Resource allocation & reward systems

The previous University strategy put emphasis on enhanced resource capabilities, greater internationalization, and increasing mobility, to mention the most important aspects. The Business Studies Panel notes that advancement in all three areas has taken place at the RG level in many RGs, but not in all. Reasons for the uneven development are of course many and complicated. It seems that the resource allocation mechanisms have been developed but they have not been fully developed other than at the individual bonus level. Furthermore, the RGs have varying practices in place as to how the resource allocation takes place. The Panel advises University or Faculty level transparency in resource allocation: thus, PhD students and post-doctoral researchers would receive the same budget, irrespective of the RG.

The Panel wishes to repeat the more general recommendation of the previous evaluation and Panel recommendation from 2010 that the Faculty of Business Studies would benefit from common standards with respect to the funding of doctoral education.

The use of national JUFO classification publications as the basis for personal reward (bonuses) systems may need to be revisited and critically assessed as other, international Journal classification systems exist and are internationally used, and as JUFO does not take into account the various business studies journals in the way that the more sophisticated international ranking systems do. If internationalization is important, respecting other rankings, and taking them into account in reward systems of all kinds, may encourage international partners to collaborate and write with Finnish colleagues and, in particular, those at the Business Studies at the University of Vaasa. It may also open up avenues for junior faculty members to gain merits internationally.

The Panel has noted in the RG evaluation report that some of the RGs are very small and considers that by merging some of the RGs benefits of coordination (intellectual and otherwise) and also aspects of multidisciplinary nature can be achieved both in research input and output terms and, where appropriate, through (intellectual) critical mass. Suggestions for possible RG mergers are found in the RG evaluation report.

Finally, the Panel would emphasize that the strategic leadership of RGs is crucial for their successful performance, growth and future development. As a consequence, it recommends that the University pays sufficient attention to strategic leadership, in order to make the University of Vaasa even more agile and successful in the future.

4.3.2 Auditing and Control in Accounting Research Group

Quality of research

Numerical Rating: 5

The work provided in the twenty papers identified, including the four papers copies of which we are provided with, is of a generally good quality in terms of the journals in which the work is published. Of the four papers provided, one of them is published in a world-elite journal, with another published in a very highly ranked journal. The other two, along with many of the other papers listed, are published in journals that are well-known internationally, of long standing, and part of the Social Science Citations Index (SSCI). In journal rankings other than the national JUFO system, there is one paper that is of the 4*-rated category in the ABS ranking, and two others are of the 4-rated category, and nearly 50% of them in total are of the 3-rated category or above. A similar percentage of publications are of the A and A* categories in the Australian Business Deans Council. Given the size of group, the circumstances described in the document affecting the availability of personnel in the group, the volume of papers produced, of the quality indicated above, is perfectly reasonable.

One comment can be made about the research output of this group. The four publications that are provided to the Panel use non-US data. To publish two of these papers in major North American journals using Swedish data constitutes an achievement in and of itself. That this work has been performed involving the more junior researchers in the group is even more creditable.

Researcher training

Numerical Rating: 4

This group maps onto part of the Department of Accounting and Finance that was evaluated in the 2010 review round. With respect to the views of the students the Panel interviewed, they remain the same as before – they are happy with the high level of access to their supervisors and support they receive. The students are encouraged to think in an international research context.

In conversation with senior group members, the Panel were told that, for various reasons, there are a number of doctoral students of the University of Vaasa supervised remotely from around Europe. The Panel was unable to gain full clarity as to how these students are supervised and how their progress is monitored and, overall, the place of these students in the University of Vaasa framework.

Further, although not exclusively so, the reputations of two of the senior professors of the research group are based upon excellence in research publications in an area of financial statement analysis that is less fashionable currently than was previously the case. Doctoral student education and recruitment might benefit from an expansion of research expertise and supervision at the senior level.

Research environment

Numerical Rating: 4

The current level of external research funding is relatively low, having been higher in the earlier years. Perhaps this is a consequence of the difficult personal circumstances of some of the senior professors over the period, but also follows the general trend of decreasing external funding available for research. Further, overall research productivity at the level aspired to by the group and the Faculty might benefit from an expansion of research expertise at the senior level. Nonetheless, the Panel notes that this group is part of the Department of Accounting and Finance and an observation of the Panel in the 2010 review for that unit was that it had an established research culture. The group does reflect that culture.

Societal impact of research

Numerical Rating: 4

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice. One particular area of this type of activity in the group is in the area of credit analysis. Another is in the area of audit legislation.

Overall rating of research group

Numerical Rating: 5

Panel's recommendations for the future

The Research Group in Auditing and Control in Accounting is small and its research *foci*, as judged by the twenty publications of which the Panel has been made aware, appear to be based around the traditional expertise of two senior professors in the group. As a consequence, it is not clear that the group is particularly coherent from an intellectual point of view, with the four featured publications not reflecting that expertise. Further, as mentioned, although there is financial accounting research being pursued in this Research Group, the words 'financial accounting' are also part of the title of another research group at the University of Vaasa. As mentioned above, auditing research takes place in both this group and the Finance and Financial Accounting Research Group. As a consequence, it is difficult to see the intellectual rationale for separating out the two groups. Further, as suggested above, there is the possibility of constructing an accounting, economics and

finance research group, although such a group would have to respect the different intellectual traditions of the three areas, whilst also attempting to gain from collaboration.

4.3.3 Business Law, Information and Knowledge Research Group

Quality of research

Numerical Rating: 4

It is still, to a large extent, the dominant practice to publish in Finnish in legal studies. Given this background, the Research Group of Business Law, Information and Knowledge publications follow the reigning European publication practices of the academic legal discipline to publish in the mother tongue. In its evaluation, the Panel has taken this practice into account. The Panel notes that the number of peer-reviewed scientific articles (refereed journal articles) has increased during the evaluation period. The number of publications has increased during the period and, in 2014, was quite high. However, only a few of the journals selected for publication outlets can be classified as leading publications, and none as top publications within their respective fields.

The profile of the legal research is distinctive and, in comparison to previous evaluation, the profile has developed in a positive direction. Compared with legal education in general, the Business Law, Information and Knowledge Research Group does not solely concentrate on legal dogmatism.

The majority of the publications published are at the good international level, and all others are at the fair international level.

Researcher training

Numerical Rating: 4

When compared to the earlier evaluation period, the number of doctoral students has increased considerably, indicating that the recommendations of the previous assessment have been taken seriously with respect to doctoral training. The development is thus positive. However, the external funding collapsed during 2013-14 and securing the long-term funding for the doctoral students is needed in order to create stability, continuity and growth of the Research Group. Considerable numbers of personal grants have compensated for the lack of continuous external funding of the Group.

The doctoral training is individualized and with no thresholds, using national doctoral courses such as KATAJA when possible. These practices provide flexibility for individual students. However, securing the comparative and coherent knowledge levels over time among doctoral students may need special attention. Widening the international collaboration in doctoral training is advisable. Doctoral students do attend national and international conferences when suitable. Doctoral students are strongly committed to the University of Vaasa and to the research group.

Research environment

Numerical Rating: 4

The Research Group of Business Law, Information and Knowledge was quite successful in attracting external funding during 2010-11 but, thereafter, the amount of external funding has collapsed. On the other hand, there were (e.g. in 2014) small scale projects funded nationally and internationally. The topics for the research originate from the 'research cells', which more or less follow the subject areas in question. This structure, organised in the cells, may be appropriate for larger units and organizations, but the Panel needs to address the question of whether the 'cells' work in small units, or whether they lead into 'one-person-bands', with less or no scalable benefits when compared to average size research groups.

There is some co-operation with other units offering education in law in Vaasa. More systematic and even closer collaboration is worth considering. There is some collaboration with other research groups within the faculty. Also here, closer collaboration is worth consideration as collaboration both within the University of Vaasa and outside may open avenues to international level research and collaboration.

Societal impact of research

Numerical Rating: 6

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

Due to its nature, the Research Group of Business Law, Information and Knowledge has an important societal role nationally, regionally and locally. The current PhD topics have direct relevance to society, and the unit has followed the previous Panel recommendation to engage with public audiences. The research has been highly relevant and has strong impact on different fields and a growing number of fields. Continuing the training for Finnish court judges exemplifies the high value placed on the research group in the Finnish legal community and also outside of the University.

Overall rating of research group

Numerical Rating: 4

Panel's recommendations for the future

International collaboration is recommended as business itself, its environment and especially its legal environment is increasingly either European or international.

The internationalization of the Research Group is developing favourably and in the right direction. The fields and research topics where the Research Group currently is planning to initiate, or has already initiated, international collaboration and co-operation, need, however, further systematic and long-term planning. For example, nationally published research papers and monographs should be published in article format in international outlets, thereby allowing the research results of the group to become part of the international debates and discussions in legal studies.

As one practical recommendation, the Panel recommends the change of the name of the Research Group from *Research Group in Business Law, Information and Knowledge* into a more descriptive and compelling name of *Research Group in Law and Business*.

4.3.4 Consumption Research and Customer Value Creation Research Group

Quality of research

Numerical Rating: 4

Overall, the research carried out by the group is both basic research and practice-oriented research. The group has exciting and interesting research themes, both conceptually and for practice: food consumption, transforming energy consumption, catalysing business revisions and the meaning of consumption. The themes follow recent international developments, but are also characterised by originality such as transformational marketing (assuming some responsibility as a “business reformer”), the cultural meaning of consumption and bio-economy (sustainability).

The research group uses different methodological and theoretical approaches, such as the social interaction paradigm, phenomenological hermeneutics and ANT, as well as more traditional ones such as survey-based and (quasi-)experimental studies. The collaboration of a new laboratory is highly promising.

The number of publications varies between the years. Over the five year period, there are four at the JUFO2 level and 42 at the JUFO1 level. The Panel assumes that those listed as the 20 most relevant are among these. No Consumer Behaviour journals have been allocated a JUFO3 ranking, although they are highly ranked internationally. The highly problematic nature of JUFO rankings not having all fields presented in all categories as publication outlets is noted by the Panel.

As to international ranking of ABS ranking, only one of the 20 papers listed is published in an ABS3 journal, five at ABS2 and one at ABS1. ABS does not cover book chapters. Most of the 20 listed most relevant publications are co-authored, indicating research collaboration. However, the international networking of the group should have resulted in more internationally co-authored publications.

Researcher training

Numerical Rating: 4

It is primarily the professors who are carrying out the supervision of PhD students, both as main and second supervisors. The supervision is on a day-to-day basis, mostly carried out within the thematic groups, where junior academics take part (although not in general as second supervisors). Twice a year, every PhD student presents his/her work progress at a seminar with the whole research group in attendance.

The PhD students participate in both nationally and internationally arranged doctoral courses, and both the PhD students and junior academics are encouraged to attend international conferences, and to apply for external grants for this purpose, but are otherwise financed by the Department or by the research group. The percentage of foreign PhD students could be higher.

The junior academics are free to pursue research directions based on their own interests, and thus gain project leadership and research management experience. In some cases, they collaborate within the research group, but also with other research groups and with researchers in other institutions in Finland or abroad. This takes place more on an individual level than at the research group level.

Research environment

Numerical Rating: 4

The research is organised around the different themes, which may vary over time. People do co-operate within the research group, but more at the individual (theme-based) level than at the research group level. The professors are responsive to junior academics and PhD students upon request.

The group has received a number of external grants which are not shown in the statistics received by the Panel (as the statistics only include grants received and paid through the University, and not the ones granted directly to individuals). There is, however, potential for increasing these types of grants, especially by applying for TEKES and EU grants, as well as for enterprise funding.

The research group organizes an international conference on consumer research every second year, bringing researchers from other academic institutions in Finland and from the Nordic countries to Vaasa. Since one of the research themes is related to consumer behaviour and services, there could be more interaction with research centres focusing on retailing.

In their research projects, the group collaborates with many firms, which creates a practice-oriented research environment which contributes knowledge of the real business world to the researchers. This is also in line with one of the strategic goals of the University.

The research group is taking on quite a number of academic assignments, both in Finland and abroad, (e.g. as expert reviewers of scientific publications, in governing bodies of scientific organizations, or as experts in scientific conferences). However, the group has only been involved in a small number of assignments as dissertation opponents or reviewers. Especially for junior academics, such assignments could be of value.

Societal impact of research

Numerical Rating: 4

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

The group's research is definitely relevant for industry, especially their target industries: the food and energy industries. The societal impact of the research group seems to emerge especially from the collaboration with firms in research projects, where knowledge is transferred as the research is being carried out, as well as at branch meetings. This type of business-related research project seems to be prevailing in the research carried out by the group. It is claimed that results have impacted on product development, efficiency and product marketing at these firms, as well as in the food and furniture industries in general.

However, there is a lack of societal positions in which researchers would be able to influence decision making directly based on research, and only a few publications are intended for professionals (none during the last two years), which would help the dissemination of the group's research results.

Overall rating of research group

Numerical Rating: 4

Panel's recommendations for the future

As there is a need for even more intensive and structured doctoral training, the Panel recommends that the associate professors are brought in more to supervise PhD students as second supervisors. There is potential for the group to publish in higher ranked international journals (i.e. ABS 3 and 4) for example by utilizing the international networking of the group. The Panel recommends that the international networking could be expanded to retail research centres such as those at St. Gallen in Switzerland, at the Stockholm School of Economics, or at Lund University in Sweden, or at the Kellogg School of Management in the USA, among many others. The Panel further recommends increasing foreign PhD students and junior academics, activities in assignments such as PhD thesis opponent or reviewer, especially for the junior academics. The group could consider publishing more publications intended for professionals, and make a plan for more forms of dissemination of their research results than presently used, as their research, to a great extent, is directed towards the industry.

The faculty may consider merging the *International Business and Marketing Research Group* and the *Consumption Research and Customer Value Creation Group* in order to reach a more stable critical number of senior and junior researchers, and possibly being able to form bigger groups of PhD students within a related theme. It would also be advisable in order to increase research collaborations when suitable, utilizing the management theoretical competence already there (wished for by the group), increasing the potential for groups of PhD students within each theme, increasing international presence, and increasing the number of internationally higher-ranked publications.

4.3.5 Finance and Financial Accounting Research Group

Quality of research

Numerical Rating: 5

The work provided in the twenty papers identified, including the four papers copies of which the panel are provided with, is of a generally good quality in terms of the journals in which the work is published. Of the four papers provided, one of them is published in a world-elite journal, with the others published in journals that are well-known internationally, of long standing, and many of them are part of the Social Science Citations Index (SSCI). Of the twenty papers, in journal rankings other than the JUFO system, there is one paper that is of the 4*-rated category in the ABS ranking, and most of them are of the 3-rated category. Most are of the A and A* categories in the Australian Business Deans Council. Given the size of group, the volume of papers produced, of the quality indicated above, is perfectly reasonable.

Researcher training

Numerical Rating: 6

This group maps onto part of the Department of Accounting and Finance that was evaluated in the 2010 review round. With respect to the views of the students, they essentially remain the same as before - they appear happy with the level of access to their supervisors and, indeed, it appears that their supervisors are seen as highly supportive. They are given counselling concerning their future careers, and how the topics they choose for various parts of their careers feed in to career opportunities. Further, they are encouraged to expose their work nationally and internationally and resources are provided for this purpose, as well as for other types of research visits. The students organise internal seminars amongst themselves to help each other. Overall, the evidence suggests that the group attracts good quality research students, both nationally and internationally, and treats them well once they have arrived.

Research environment

Numerical Rating: 6

Research funding has been found to help the group. Importantly, the funding of important secondary datasets has been found, a necessary but not sufficient condition for the delivery of high quality research. This group is part of the Department of Accounting and Finance and an observation of the Panel in the 2010 review for that unit was that it had an established research culture. This group very much reflects that culture, one in which everyone is clear on their responsibilities to carry out high-quality research with a view to getting it published in internationally reputable journals. In the last review round, this culture placed the group apart from many

other areas of the Faculty. The separation is much less visible now in comparison to previous evaluation period.

Societal impact of research

Numerical Rating: 4

The Panel considers that all the research conducted in the Faculty is relevant to social needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

One particular area of this type of activity in the group is in the area of shareholder advocacy. Another is in the area of derivatives usage by electricity companies.

Overall rating of research group

Numerical Rating: 5.5

Panel's recommendations for the future

This is a larger group than some of the others investigated. It has a clear sense of purpose concerning research. Financial accounting is included in the title of this group, even though financial accounting research takes place in the Auditing and Accounting Control Group. Furthermore, auditing research takes place in this group. As a consequence, it is difficult to see the intellectual rationale for separating out the two groups. As in many other universities around the world, accounting and finance research and teaching are seen as having degrees of overlap and, therefore, it is reasonable to have a Department of Accounting and Finance which serves as a focus for both areas.

4.3.6 Human Resource Management Research Group

Quality of research

Numerical Rating: 6

The research group continued to advance from the previous assessment as an excellent, coherent and motivated group performing well above target, with an excellent list of publications. They are at the forefront of HR research with state of the art research topics and excellent performance as a group.

Of the 20 papers presented, 2 of them at JUFO3 level, one third (7/20) at excellent international level: one paper published in an ABS 4* journal and six in ABS 4 journals. A further eight are published in ABS 3 journals, four in ABS 2 and one in ABS 1.

The group has a well thought out research strategy, with three distinct, yet connected, sustainable strands of general topic areas: International HRM, Strategic HRM and Leadership, and a number of cutting edge subjects, such as knowledge intensity-linked HR, mobility, workforce diversity, organizational learning, leadership in complex organisations, and discrimination. However, a warning should be added that new topics should have enduring significance and fit with the overall research theme of the group.

The group demonstrates strong scientific impact through a large number of national and international projects, publications in a large number of highly ranked peer-reviewed journals, and an impressive awards/citation list. Their publication strategy is certainly working, having the largest number of ABS4/4* papers of all the research groups in the Business School over the period. The group is working with key scholars in their chosen fields, both in Finland and abroad, so they can learn from each other and share best practices, and it aims to be working more intensely and with a more extensive group of them in the future.

Researcher training

Numerical Rating: 6

The group is a well-integrated and coherent body in which professors and senior staff take responsibility for junior faculty development, partly by involving them in international networks and also by stimulating participation in conferences abroad, allowing each PhD student a budget of 2,000 Euros, and assistant professors a budget of 2,500 Euros.

Doctoral research seminars take place twice a year, with frequent interaction between student and supervisor throughout the year, interaction which is appreciated by the students. The group shows flexibility in how they cater for external PhDs. Senior and junior members of the group publish together, making the writing process a learning and knowledge transfer exercise: a sign of good practice, and a good working climate. PhD students have 2 supervisors each and spend a maximum of 20% of their time on teaching and administration. Gaining a

place in the group is quite competitive, with an acceptance rate of only 10-15%, thanks to the high reputation of the group.

Research environment

Numerical Rating: 6

The group is well motivated, diverse and highly involved with each other's work. As the sole provider of HR specialised Masters and MBA programmes in Finland, the group may be spoilt for quality staff choice, and is constructively exploiting this. There is a good balance in the group between professors, senior and junior faculty, and PhD students. The strength of group is presented as based on connections with stakeholders, from key scholars and researchers to HR professionals and employees.

The whole research group is working with its networks, often through projects. The research group actively seeks to expand its international networks. The group has a good external funding record, including a grant from the Academy of Finland, and is planning further applications to TEKES, as well as internationally (e.g. to the EU). The group is planning to work with an international Group Advisory Board to help guarantee quality and relevance (e.g. by examining the group's research agenda and keeping it on track).

Societal impact of research

Numerical Rating: 5

The Panel considers that all the research conducted in the Faculty is relevant to social needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice. The group has a strong societal impact within, and through, collaboration with HRM professionals, as well as through the Finnish HR Barometer, and research on Expatriates in MNCs.

There is longstanding cooperation and partnership both with industry and with the public sector, with large scale research projects (e.g., work with the Finnish Association for HRM HENRY, City of Vaasa etc.), and the recent extension of the activity foci to include SMEs as well as large organizations, and coaching.

Overall rating of research group

Numerical Rating: 6

Panel's recommendations for the future

The Panel notes that the Research Group should compete with leading HR groups / research institutes. This would mean that in the future the group should be even more ambitious and, instead of JUFO, should aim for ABS level 4 publications.

The Panel notes that more emphasis should be placed on external funding, especially international, such as EU-funding. Business sector funding should be possible due to the group's external interactions. Internally, the good work should be tightened up and the groups may need to be more systematic in research training, as well as establishing training and mentoring for supervisors, including more interaction with international scholars.

In relation to both individual research topics, and their connections to the larger thematic fields chosen, there is a need to ensure that each chosen field or topic achieves critical mass, providing space for topics that have more enduring elements and also for some future topics, where it remains to be seen whether they will last as enduring research areas or should be seen more as free-standing explorations within new fields.

4.3.7 Intangible Capital Research Group

Quality of research

Numerical Rating: 5

The work provided in the ten papers identified, which the Panel treats for the purposes of this report as the 'submitted work', including the four papers copies of which we are provided with, is of a good quality in terms of the journals in which the work is published. The journals, whilst not of the absolute highest bracket in terms of reputation, are all well-known internationally, of long standing, and most of them are part of the Social Science Citations Index (SSCI). In journal rankings other than the JUFO system, they are generally of the 3-rated category in the ABS rankings (4 and 4* being the highest ranking) or the A category in the Australian Business Deans Council rankings (A* being the highest ranking), which can be regarded as providing a degree of confirmation to the opinion on quality provided above. Given the size of group, the volume and quality of papers produced, of the quality indicated above, is perfectly reasonable.

Researcher training

Numerical Rating: 4

There are only a small number of doctoral students, which is reasonable given the small size of the supervisory capacity. Judging by the doctoral students the Panel met during site-visit, they have good access to preparatory courses via the national doctoral activities in economics. Further, the doctoral students appear happy with the level of access to their supervisors and, indeed, it appears that their supervisors are seen as highly supportive. The level of aspirations with respect to returning to the labour market post-graduation appear to be mainly local or national, although one current student is interested in exploiting global job opportunities.

It was not clear that the labour market aspirations of doctoral students fed into the form of dissertation completed or, indeed, the overall choice of topics. Nonetheless, the more recent students have sole access to a database that has arisen as a consequence of the efforts of one of the group's professors. This database has the potential to give rise to a source of competitive advantage in completing dissertations in the area of evaluating the effects of intellectual capital from the perspectives of economics. As a consequence, projects based upon access to this data source will, hopefully, stand the doctoral students in good stead as they enter the labour markets of their choice.

Research environment

Numerical Rating: 4

Research funding has been found to help the research group. Further, the funded INNODRIVE project has given rise to an interesting dataset that the Panel believes has the potential to be an important part of the group's comparative advantage in research activities in future years. Also, this project, and the general level of personal connections in the research group, give rise to a useful set of international connections that, in turn, can give rise to access to current international developments in the areas of interest to the group.

It is not clear whether the job designs of the professors in the group (or any group within the Faculty) are a source of competitive advantage with respect to the pursuit of high quality research, compared with the job designs of those of other researchers in Australasia, Europe and the USA with whom they are expected to compete for scarce space in high quality journals. In some respects they may be – the availability of reasonable levels of funding of research support from national agencies breeds a certain amount of academic creativity and entrepreneurship. Nonetheless, the time spent acting as a creative academic entrepreneur, including monitoring and accountability activities with respect to grants as well as time spent writing grant applications, might have detrimental effects on research output and research quality.

Societal impact of research

Numerical Rating: 4

The Panel considers that all the research conducted in the Faculty is relevant to social needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the research group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

One particular area of activity in the group that has particular potential for societal impact is in the area of financial literacy. This is an increasingly important issue around the world, and not just in Finland. But, also, the work in intellectual capital has good potential to inform economic policy.

Overall rating of research group

Numerical Rating: 5

Panel's recommendations for the future

This group is small and primarily based intellectually in economics. The name is misleading in the sense that banking is part of the group, as is financial literacy and economic forecasting. This is not to comment on the quality of the work in the other areas, merely to point out that, currently, there is not much of a direct link to intangible capital for these areas of research activity. Basically, the document implies that this is a small Department of Economics with a set of interests based around the interests of the professors in the Department, with a degree of commonality between them, but not a lot.

In terms of future prospects, one advantage that the group has generated is in terms of private access to data. Much economics research uses secondary data provided by corporate data providers (e.g., BankScope), which implies that many have access to such data and, therefore, its use cannot be a source of competitive advantage. As a consequence, generating data to which the institution has unique access and, specifically, data which is designed to help the answering of interesting questions that cannot be answered well with existing data, is a source of competitive advantage. Hopefully, this competitive advantage can be turned into high quality research publications.

The Panel has generic concerns about the effectiveness of small research groups based around a small number of key individuals, and the interlinking of short-term teaching demands in the presence of staff absences or shortages with research progress. If it were to be thought that groups of the size of the Intangible Assets Research Group are too small on principle, for whatever reason, there are clear intellectual overlaps between this group and the Finance and Financial Accounting Group and the merging of the two groups. Indeed, the merging of the two groups could be justified on intellectual overlap grounds alone.

4.3.8 International Business and Marketing Research Group

Quality of research

Numerical Rating: 5

The publications submitted for the evaluation are all in the JUFO classification, mostly in JUFO2. The publication count during 2011-14 amounts to 75, of which 21 are classified as JUFO2, 16 as JUFO1 and 36 as JUFO0. Of the 20 publications presented as the most relevant ones, 19 are at the JUFO2 level and one at the JUFO3 level. Ten of the papers are published in ABS level 3 journals, one in an ABS2 level journal; nine are chapters in books.

The outputs observed are equally spread between papers published in good quality journals and chapters in books by reputable publishers. The balance between journal articles and book chapters is skewed towards book chapters. The number of peer-reviewed journal articles has increased annually over the period, while the number of conference papers has gone down, indicating an increased focus on journal publications. However, the potential of the group is not matched by the current output.

All articles are co-authored, with colleagues from the research group and with external co-authors, both national and international, showing both national and international research collaboration. All professors, and most of the junior academics, have contributed to these publications.

The three strands (research areas 1-3) represent three research areas that are distinctly separate, yet have bordering subjects and, together, cover some of the key fields of international business and marketing, with both solid traditional topics and new emerging themes, for example CSR. The use of quantitative and qualitative methods seems to be well-developed and implemented. The data of the FDI databank could be exploited even more than is currently the case (e.g., to attract further PhD students and to attract foreign co-authors).

Researcher training

Numerical Rating: 5

Research training is well developed. Two PhD courses, one in the IB field and one in cross-cultural research methods, and an international tutorial scheme, seminars and conference presentations are run as a systematic programme, and professors, junior faculty and PhD students collaborate frequently. The PhD students also attend nationally and internationally organized courses.

Faculty are actively engaged in advising PhD students regarding conferences, careers and personal development in general, and involve them in projects from the start, which is a positive development relative to the assessment of five years ago.

Most of the newly recruited PhD students (11/13) and most of the doctorates awarded (7/11) during the period are foreign students, which is in line with the internationalization objective of the university. The number of international exchanges, and opportunities for PhDs and junior researchers to experience a research environment abroad, preferably for a longer visit, could be improved.

On average, the rate of doctoral completions was 1.8, thus almost two per year (and more towards the end of the five-year period), exceeding the average university target of one per year.

With regards the learning culture in the group, there is potential for further and more intensive knowledge transfer from the professor level to junior faculty and PhD researchers. Junior faculty need more support to achieve publications in even higher ranked academic journals.

Research environment

Numerical Rating: 5

The research group meets nine times per year to present and evaluate work emanating within the group. There also seem to be sufficient opportunities to meet outside these nine meetings. The group members are given many opportunities to participate in conferences (46 paper conference presentations during the period, but only two in the last two years). The balance of having three professors and five junior academics supervising circa ten PhD students (as listed) is appropriate and should not be stretched further.

Foreign professors visit circa twice a year, ensuring international collaboration and resulting in some joint publications. The many joint publications overall (all of the listed ones) indicate high collaboration both internally and with researchers at other institutions (in Finland and abroad). This is further enhanced by the three international partner projects coordinated by the research group.

The group is renowned for its excellent International Business conference, attracting faculty and PhD researchers from many countries. The group has been active in making expert contributions to scientific publications and compilations, at scientific conferences, and, to some extent, in national scientific organizations, but could be more active in areas such as acting as thesis opponents, reviewing theses and applications for academic positions, and in international scientific organizations.

Circa one third of the overall funding consists of external grants, but the amounts seem to have decreased.

Societal impact of research

Numerical Rating: 4.5

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the

group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

The research group contributes to society primarily by collaborating with firms and public organisations in research projects, collecting data while at the same time providing them with new knowledge and advice/recommendations for decision making. Results are also disseminated through forums such as workshops and through governmental organizations such as Finpro, Viexpo and ELY Centre. There seem to be a great potential in the group for more societal assignments and contributions.

Overall rating of research group

Numerical Rating: 5

Panel's recommendations for the future

The Panel notes that a more systematic utilization of international networks could be a successful strategy for widening the research themes and for successfully applying for EU grants. With respect to the group's publishing strategy, the Panel notes that publishing in more prestigious journals (ABS level 4 and 4*) is within reach of the group. The group can also encourage and help junior faculty to take on assignments as PhD opponent or PhD thesis reviewer. Internal knowledge transfer from the three excellent researchers to more PhDs and to junior faculty could be enhanced.

In view of the new research themes in the group, there is an opportunity to invite foreign professors for research visits. The research group could take on more societal assignments and also write some publications intended for professional communities. The Panel finds that there are good possibilities available for attracting more prestigious international collaborators to work with the FDI data.

The faculty may consider merging the International Business and Marketing Research Group and the Consumption Research and Customer Value Creation Group in order to reach a more stable critical number of senior and junior researchers, and possibly being able to form bigger groups of PhD students within a related theme.

4.3.9 Personality Approach to Leadership and Organizational Behaviour Research Group

Quality of research

Numerical Rating: 3.5

Research in the group is mostly focused on organisational behaviour. While there are many directions within OB research, the small group has focused on personality measures and leadership. Over the period 2010-2014, the group has produced 25 JUF0 0 category papers, 6 papers published in JUF0 1 journals and 1 in a JUF0 2 journal. Of the 10 publications presented as most relevant, two are in journals ranked as ABS2, and one as ABS1. There exists several excellent publication outlets on OB and leadership, and they should be targeted by the research group.

Although the research group is extremely small, and there seems to be some JUF0 0 volume, this total output is not of a sufficient standard. Whether this relates to the research topics or whether the reason for the small number of publications over the analysed time period relates to the smallness of the group, remain unclear. The group has received circa 250K Euros in external funding over the period from national foundations.

Researcher training

Numerical Rating: 4

This very small group of one professor and one associate professor deals currently with five doctoral students. The doctoral students seem to be perfectly happy. They are able to meet their supervisor frequently, are supported in international contacts and conference attendance, and are making progress with their dissertations. When appropriate, the doctoral students also attend research meetings elsewhere.

Research environment

Numerical Rating: 3

With a group of one professor, one associate professor and five doctoral students, the research environment is relatively small but, for doctoral students, there still seem to be alternatives in the form of internal and external seminars, conferences and training available. The active participation of the doctoral students needs to be developed in the future if the group is to continue. Also, thesis supervision needs to be organized in systematic way after the professor has retired.

Societal impact of research

Numerical Rating: 3

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

A number of examples were provided of current or potential projects during the site-visit.

Overall rating of research group

Numerical Rating: n/a

Panel's recommendations for the future

The Evaluation Report of Personality Approach to Leadership and Organizational Behaviour Research Group takes up the issue of bullying. During the site visit, the issue was repeated. The Panel suggests that University investigates the allegations made in the Evaluation Report of the Group and takes necessary actions in case they are needed.

The Panel recommends actions to be taken by the Faculty as the research group is so small, with only one permanent post and mostly without external funding, and the professor is retiring in 2016. The remaining group should be merged into another research group and supervision of the doctoral students should be systematically taken care of.

4.4 Joint evaluation of the Panels of Business Studies and Technology

Networked Value Systems is a joint interdisciplinary research group of the Faculty of Business Studies and Faculty of Technology. Therefore this research group is evaluated jointly by the Panels of Business Studies and Panel of Technology. Panels collaborated and produced one joint report on this research group.

Panel of Business Studies

Chair:

Ms Anne Kovalainen, Professor, University of Turku/Turku School of Economics, Finland

Panel members:

Ms Carla Millar, Professor, University of Twente, Netherlands

Mr Kalle Määttä, Professor, University of Eastern Finland, Finland

Mr Andrew Stark, Coultts Professor, Manchester Business School, UK

Mr Richard Wahlund, Professor, Stockholm School of Economics, Sweden

Panel of Technology

Chair:

Mr Jovica V. Milanovic, Deputy Head of School & Head of Electrical Energy and Power Systems Group, University of Manchester, UK

Panel members:

Mr Mats Abrahamsson, Professor, Linköping University, Sweden

Mr Philip de Goey, Full Professor, Eindhoven University of Technology, Netherlands

Mr Hannu Kari, Research Director, Professor, National Defence University, Finland

Mr Ari Laptev, Professor, Imperial College London, UK

Joint member

Mr Matti Sintonen, Professor, University of Helsinki, Finland

4.4.1 Networked Value Systems Research Group

Quality of research

Numerical Rating: 5

This is large and well-established research group, with good level of external competitive research funding and very good research output. The research is well positioned both nationally and internationally with three interconnected research areas: New product development, Order fulfilment and Service business. The research publications represent a mix of journal and conference papers: the research group of c. 50 researchers published 215 journal papers in last five years of which 5% (11) JUFO3 and 19,5% (42) are JUFO2 papers. Majority of the papers are in below JUFO2. When analysing the publications with the help of the internationally used ranking systems such as ABDC and ABS, 12 JUFO3/JUFO2 publications are at A*3 category and only one in A*4* category and none in A*4 category. A significant number of published papers have international co-author(s).

Researcher training

Numerical rating: 5

The group has a large number of PhD students. 60 PhD students registered in five year period. 28 graduated during the same period. The reasonably low number of awarded doctoral degrees during the assessment period compared to a number of enrolled students relates to the fact that many of the students are pursuing their doctoral degrees as part time students working in industry. The Panel is not aware whether the reason for part-time studies is the lack of full time scholarships, or the need to keep contact with the industry with further prospects of gaining better position after graduation. On average there is one PhD student per FTE member of academic staff per year which is higher than internally set threshold of 0.6 PhD student/per year/academic. The PhD students are co-supervised by at least two academics in addition to guidance provided by industrial sponsors from the large network of partner companies. The meetings between student and supervisor(s) are frequent and regular, with good practices in place. All doctoral students are enrolled in courses offered by the Graduate School.

Research environment

Numerical rating: 6

External funding €6.24M (57% of total funding received by the group) including €100K from Academy of Finland, €2.9M TEKES and €800K EU finding is mostly (approximately 61%) from competitive sources and €1.4M from national industry. Considering a number of relatively short term industrial projects a clarification is

needed which these are research and which of these are consultancy projects. There is large number of joint publications with international colleagues (40% average) and several international projects including EU projects. The list of international collaborators includes colleagues from some internationally leading business schools and institutes of technology, e.g., University of Oxford, Georgia Tech. There is a large number (84) of short visits and 18 longer term visits abroad as well as a notable number of visits by international researchers to Vaasa, 42 and 15, short and long visits, respectively. This is certainly very good and confirms strong international involvement. A part from conference assignments and joint publications there is notable expert involvement in governing bodies of international scientific organisations. There is large number of collaborative national project and a bit modest joint publications (compared to international involvement) with national organisations (14% on average). The research collaboration is established with leading national universities. There is also notable involvement in expert assignments in Finland including governing bodies of scientific organisations and high involvement in PhD exams. Their value claim did not appear to be based on the networks. The leadership of the group has clear vision, aims and objectives. The group with technology and management is still split by disciplines and more work is needed for fully integrated research group.

Societal impact

Numerical Rating: 6

The Panel considers that all the research conducted in the Faculty is relevant to societal needs. Across the Faculty, the Panel is generally impressed by the range of activities pursued by academic staff within society and with respect to economic activity overall. The type of activity pursued varies by the particular nature of the group. For some units, the extent and scope of their research activities lend themselves more easily to interaction with business and commerce. For other groups, the extent and scope of their research activities lend themselves more easily to the offering of policy advice.

The research group has extensive collaborations with wide range of small and large companies, of which many host multiple research projects, including master students, PhD-students and senior researchers. Many research projects carried out by the group result in solutions, concepts and models adopted by industry and lead directly or indirectly to tangible benefits to the wider community. The extent of direct involvement with wider community and society in general including the public sector decision making bodies such as ministries (outside industrial research sponsors) is unclear. There seems to be lack of activities related to general outreach activities such as popularisation of research, public lectures, widening participation, visits to schools, etc.

Overall rating of research group

Numerical Rating: 5.5

The group is performing very well and is on a good path to becoming an internationally recognised research group. Overall, the publications include some high quality publications, and there is a clear vision towards the best outlets and ways to publish in the world leading journals. Both the emphasis on high quality publications as well as very good international collaboration pave the way to intensifying high quality in all research work. International visibility is very good and growing. The group has very good and diverse research income from all relevant sources. The overall decreasing amount of competitive funding needs to be taken into account in planning of the composition and size of the group. There is good exchange of researchers with international organisations and universities. National visibility is also very good. Societal impact is significant. The group leadership is fully aware of potential improvements and some of them are clearly identified in the group's self-assessment statement. The Panel recognizes that the research group is clearly developing, if current plans come to fruition, towards being an excellent.

Panel's recommendations for the future

The Panel notes that the research group attempts to focus on high quality publications which is supported by the Panel. The Panel recognizes the need to further develop the internal cohesion as research group in order to build up stronger interdisciplinary linkages. The Panel notes that attention is needed to monitor the progress rate of PhD students. The Panel encourages the adoption of active leading role in EU projects.

4.5 Panel of Technology

The Panel of Technology evaluated research activities of the five research groups of the scientific field of Technology. One of the research groups is interdisciplinary and was evaluated jointly with the Panel of Business Studies.

The units of assessment:

- Mathematics and Statistics
- Networked Value Systems³
- Renewable Energy
- SC-Research
- Smart Electric Systems

Chair:

Mr Jovica V. Milanovic, Deputy Head of School & Head of Electrical Energy and Power Systems Group, University of Manchester, UK

Panel members:

Mr Mats Abrahamsson, Professor, Linköping University, Sweden

Mr Philip de Goey, Full Professor, Eindhoven University of Technology, Netherlands

Mr Hannu Kari, Research Director, Professor, National Defence University, Finland

Mr Ari Laptev, Professor, Imperial College London, UK

Joint member:

Mr Matti Sintonen, Professor, University of Helsinki, Finland

Site visit: 28.-30.10.2015

³ Networked Value Systems is a joint interdisciplinary research group of the Faculty of Business Studies and Faculty of Technology. Therefore this research group is evaluated jointly by the Panels of Business Studies and Panel of Technology. Panels will collaborate and produce one joint report on this research group.

4.5.1 Evaluation of the scientific field of Technology

Overall evaluation

University of Vaasa is a "business oriented university", with a clearly defined strategy with four focus areas for their research and a set of measures to follow up the performance. Considering that the research groups in focus for the Panel of Technology are rather young, the performance is in some areas is very good while it in other there is noticeable space for improvement.

Following the previous Evaluation of Research Activities (2005-2009), the University of Vaasa focused on four key themes/areas of specialisation, with Energy being one of them. This streamlining of activities created more synergy between different fields in particular within Faculty of Technology. Additionally, Graduate school has been created that focuses on graduate training which significantly unified postgraduate education and greatly enhanced both training and overall student experience of postgraduate students.

In general the strategy of the university is well formulated and described in the strategy document. It not only describes where the university wants to be but also presents an ambitious implementation programme. In discussions with different research groups, in particular, as well as to a certain extent with the leadership of the university and the Faculty of Technology it became apparent that there are some gaps between the strategy/vision of the university and its understanding and implementation in some of the research areas. In particular, and very importantly, it appears that there is different interpretation of the core sentence in the vision statement, i.e., "University of Vaasa is business -oriented university". The interpretation of the statement given by various members of various research groups is very different from the one given by the university leadership. In the rector statement the emphasis is on "increasing business studies education" while many if not all members of research groups interpret it as increasing involvement with industry in the region. It appears therefore that the dissemination of the strategy could have been done better. Some further ambiguities in general description of university include:

- There is no requirement of research guidance in description of the role of supervisor
- There is different description of Doctoral programmes in different areas with the following statement for Faculty of Technology "...applying known methods and tools for development of new solutions for problems..."
- There is no specific attainment target for the Faculty of Technology, while there is one for other faculties.

The publication records of the different research groups are uneven and in most cases there is reasonably small number of high quality papers in top international journals. In the most cases the number of the highest quality of research papers (JUFO3) per academic per year is well below 1. There is evidence that this is not top priority for some of the research groups and that there is a lack of understanding of importance of publishing in top level international journals. There is reasonably good number of papers with international co-authors and reasonable international collaboration though highly dominated by short visits to Vaasa or abroad.

We acknowledge the Graduate school to be a critical central resource supporting the research teams. Two application periods annually is a good way to make groups of PhD-students that are in the same process and who will follow the same doctoral courses. This is critical both to shorten the duration of PhD studies and also to foster a good research environment. The practice of organising research seminars for all PhD students is very good and should be continued and student participation in these seminars strongly encouraged. The level of

researcher training is uneven across the faculty though in general at good level. The research meetings seem to be frequent in particular with the fulltime researchers. The meetings are less frequent with part time students and research guidance provided at place of work is questionable. There is evident low graduation rate of PhD students with many of them studying well over 4 years.

In total the field of technology has more than 52% of their total funds from “Basic funding” and less than 48% from external funding. The largest groups, NeVS and SES have 62-65% of their funds from Budgetary funding, while the budgetary funding for the smallest groups varies between 0% (SCR) and 100% (Mathematics). This indicates that the possibilities to deliver to the university strategy vary a lot between different research groups. Budgetary funding is essential for smaller groups in particular in order to ensure consistency of research programmes and timely completion of PhD studies.

Most of the groups are involved in dissemination of research to wider society and engaged in different activities related to increasing societal impact of research. Further strengthening of the societal impact in general is required with more focus on general involvement with wider society in the region and nationally in addition to engagement through industrial research and development projects.

Recommendations for the future

Even though English, Finnish and Swedish are accepted as research languages in Finland the publications in particular those aimed at international audience, if not all research publications, should be in English language. Publications in English will make the internationalization process more efficient, with increased possibilities for co-publishing and attendance at international conferences.

A Graduate School and tenure-track system have been introduced at university level following the recommendations of previous research evaluation committee and this is clearly the step in right direction. The practice of organising research seminars for all PhD students is very good and should be continued and student participation in these seminars strongly encouraged. The allocation of longer term grants (three instead of two years) by Graduate school for PhD studies however, would improve recruitment and efficiency of doctoral studies in particular for smaller research groups which are much more dependent on centralised funding of doctoral studies to be able to grow and develop in line with the university strategy.

The creation of MSc programme in Financial Engineering and strengthening expertise in Numerical Analysis are two competence areas that would fit very well with university strategy and enrich current postgraduate training portfolio.

Though there is observed growth in international students across faculty, centralised advertising (by university international office) and marketing of postgraduate degrees through recruitment fairs in target countries/regions would additionally strengthen recruitment of international students.

Comparing overall research performance of different research groups it is clear that there is a critical size of research group to fulfil its functions including bidding for large research projects, making significant national and international research impact, sustainable recruitment and support of PhD students and postdoctoral researchers, societal impact and provision of stable and conducive research environment. It is recommended therefore that some research groups are merged (e.g., RE and SES) or joined (e.g., Mathematics and SCR) to other groups in the university to secure stable and impactful research and stimulating research environment. A great opportunity to refocus and reorganise research is offered by the new EBIC (Electricity Business Innovation

Center) that is being built. This would offer unique opportunity to participate in large national and international projects (EU funded projects in particular) in addition to offering excellent service to regional and national industry in particular.

Furthermore, it is found that the University structure in general is too complicated and that there are many different organizational layers. Currently there are five layers: University - Faculty - Department - Research group - Research team. This should be simplified by removing either Department or Research group layer.

This risk of not fulfilling university strategy to be business oriented university that serves local and regional community and have notable impact nationally and internationally increase if there is too much emphasis placed on increasing the number of highest quality research publications (number of JUFO3 papers) in all areas of faculty activities. Instead more emphasis should be made on encouraging consistent and steady publication of high quality research papers and minimising the number of papers with JUFO 0 rating.

Further strengthening of the societal impact in general is required with more focus on general involvement with wider society in addition to industrial research and development projects.

4.5.2 Mathematics and Statistics

Quality of research

Numerical rating: 6

The research Group consists of three teams: Mathematics, Business Mathematics and Statistics. Mathematics team has one professor, one lecturer and two PhD students. Business Mathematics team has one professor, one lecturer and one PhD student. Statistics team has one professor, one lecturer and three PhD students. The list of publications presented by the Mathematics and Statistics Research Group is of high international level. Most of the papers are published in journals with high impact factors.

Indeed, publications dominated journal articles (42 in last five years) (6,10,7,7,12) , there are 3 JUFO3 and 16 JUFO2 papers. This is about 1.2 journal papers per academic per year that is a good number. The focus is by far on journal publications though there is reasonably wide ranging publication activity including books and book sections. Overall research quality of the group is very high.

Researcher training

Numerical rating: 5

All teams of the group have PhD students. There are 4 students registered in five year period, all foreign, and 3 graduated during the same period. This certainly is area where significant improvement can be made. The provided training is adequate the number of students should increase though.

One of the obstacles for PhD students in Mathematics is that there is no master programme. This is why the Mathematics and Statistics group is forced to recruit PhD students from outside. Although it is commendable that foreign students have been recruited it would be also good if the group has possibility to recruit talented local students.

Research environment

Numerical rating: 3

External funding €101K (3%) of which €7.6K Academy of Finland, no EU funding. There is no information on industrial income. Approximately €14K/academic/year – this is extremely low, even for the group involved in theoretical research. It should be in excess of €100K/academic/year. There is large number of joint publications with international colleagues from 44% to 69% (59% average) and only 1 international project. Enclosed list of international collaborators includes some internationally leading organisations. There is a large number (24) of

short visits and 6 longer term visits abroad as well as a notable number of visits by international researchers to Vaasa, 13 and, 18, short and long visits, respectively. This is certainly commendable. A part from conference assignments and joint publications and 4 editorships, highly commendable, there is otherwise limited expert involvement internationally. There is only 1 national project and modest joint publications (compared to international involvement) with national organisations (15% on average). The research collaboration though is established with leading national universities. There is modest involvement in expert assignments in Finland a part from PhD thesis examination.

The size of the group is an obstacle for a good and stimulating research environment.

Societal impact of research

Numerical rating: 2

There is very limited collaboration with national industry and regional city authorities. Involvement in popularisation of science and leadership in e-learning is commendable. The group does not have a strong societal impact.

Overall rating of research group

Numerical rating: 5

The group has a very good publication record as well as international collaboration. International visibility is generally commendable and growing. It has good exchange of researchers with international organisations and universities.

Panel's recommendations for the future

To introduce a master programme in financial engineering.

It would be desirable for the group to have a competence in Numerical Analysis.

- External research income needs to be significantly improved as well as recruitment of PhD students.
- National visibility seems to be low and needs improving through more proactive involvement and joint project bidding.
- It would be useful to organise joint PhD courses (and eventually master courses) with other universities via internet at the level.
- Societal impact is on a good path but needs further strengthening.

4.5.3 Renewable Energy

Quality of research

Numerical rating: 4

Renewable Energy Research is a rather young group (founded in 2008) and was part of Electrical Engineering and Automation in the previous evaluation period and has been split off in 2012. Also the part on Telecommunications Engineering has been moved elsewhere in 2012. The remaining group is very small since 2013 (the size reduced from 4 to 2 professors and from around 31 to 19 fte researchers). Research has been extended to fuels/engines, wireless sensors, geo-energy, energy storage, wind energy and logistics. These themes fit naturally together and this creates more synergy within the group. The research group has a strong local/regional engagement and interdisciplinary and applied research. The research has been built around laboratory capabilities in cooperation with industry. However, the professors envision that a combination of applied research with more fundamental research could help increasing their international position. The new lab infrastructure, which is currently been built together with industry, for sustainable energy research (e.g. containing low and medium speed engines) will contain unique set-ups and might create as such good opportunities for this.

The number of refereed journal publications has increased a lot, while this was very low in the previous evaluation period. It currently amounts to about 0.7 journal papers per academic per year, which is still quite low in terms of international standards. The JUFO levels increased a lot, to 15 JUFO2 papers and 1 JUFO3 in this period, but there is still room for improvement. The papers though seem not to be in the key international journals. Though the trend is obviously improving this should be at least one top journal publication per year per academic. About 1 out of 3 of the published articles are in international cooperation with other research groups outside Finland and the number of international research projects are limited – and so is the international exchange with only a few short visits the last year. Considering the international relevance of the research topics, this is also an area for potential improvement.

Researcher training

Numerical rating: 3

Researcher training in the group is no concerted effort. However, doctoral students are working as members of research teams and nobody works alone, which is good. Furthermore, graduate students participate in joint group meetings and colloquia and PhD seminars. Some of the doctoral students are members of the Graduate School. Graduate education is partly organised by the university and partly by research schools. The group now focuses more on training and guidance of graduate students than in the previous evaluation period.

With an average of 7.5 PhD students shared between 9.5 fte academics one arrives at approximately 0.8PhDs/academic. This is still low. On the other hand, intake increased to around 4 students per year but none of the started students has graduated yet. Starting up the research group in 2008 should have resulted in some doctorates by now. The first student graduates soon and with the large intake since recent years and the more strict rules of the graduate school the management of the group expects to arrive at an average of 1-2 graduates per year in due time. There is a good mix between students from Finland and abroad. In addition to this and with the fact that there are no doctorates so far, the effects of the recent changes in research training are hard to judge.

Research environment

Numerical rating: 4

International collaboration increases, while national collaboration decreases in terms of joint publications. The exchange of staff increases and international expert assignments increases as well. However, the group has still only little participation in international projects (1 EU) and has a few international collaborators. There is significant involvement in national projects and the group has collaborations with all important, some of which are leading, national universities.

Both the budgetary and external funding varies a lot between the years, indicating an unstable situation in terms of number of personnel and research projects. Internal funding decreased from €800 K to around €300 K, probably related to the mentioned changes in organisation of the groups. A large dip in external funding from 2013 to 2014 is noticed, which is related to the end of a large external project. The group indicates that this will be restored in 2015 since a new large EU-project has been granted recently. Still, the external funding per academic per year is low and should be increased further. Our impression is that the research group is still in its start-up phase. They are dependent on good laboratories for their research and we understand the time it takes to build such a platform. Considering it takes 10-15 years to build a good research environment, we think it is too soon to properly grade the research environment as is today. The new Energy Business Innovation Centre (EBIC) lab, which is built together with industry, will open new opportunities for the future.

Societal impact of research

Numerical rating: 5

The research topics are all on sustainable energy and interesting and relevant for industry and society, and there are many companies and organisations involved in their research. Considering future energy production will very likely be more local and regional with high demands on sustainability, the societal impact of the research is high today and will probably increase in the future. The group not only collaborates closely with industry, the group members also perform significant efforts to broaden their visibility in society by means of, for instance, the organisation of a regular Energy Day for and with industry, the regular Energy Week for students and public and contributes to articles in newspapers.

Overall rating of research group

Numerical rating: 4

The group is relatively young, has good momentum and achieved a lot in its 7 years existence. It has established a good lab infrastructure with funding, a start of national and international networks, a constant group of researchers after the split in 2012 and increased its local visibility (e.g. in engine/fuels, wind noise and energy storage themes), and its international profile by conferences and journal papers. However, the quality of publications to an extent, and research income and number of graduates in particular needs to be improved. This also holds for research collaboration at national and an international level. Focus is still mainly on applied research and short term contracts. The committee sees good opportunities for future development and increase in national and international visibility of the group especially if it will be related the unique lab infrastructure, which is currently being developed. However, the committee also has serious doubts whether the opportunities can be used to their full potential, due to the observed lack of leadership and strategy, which is needed to increase their international position and the related publication strategy.

Panel's recommendations for the future

To focus on research training in order to facilitate timely completion of PhD studies by numerous enrolled PhD students as a base for potential growth.

To develop clear short-term and long-term research strategy.

To consider a merger with the SES group since this would create more synergy and increase the mass of the combined group

4.5.4 Smart Electric Systems

Quality of research

Numerical rating: 3

The different subgroups of the SES research group seem to be mostly independent and have their own diversified focus. The total knowledge could be combined in multi-disciplinary SES projects, although this is not yet established. More combined focus on energy should be a future goal.

Publications of the SES research group are dominated by conferences. The number of journal articles (28 in last five years) has reduced in last three years (6,8,2,4,8) even though the number of personnel has increased. There are no JUFO3 journals and only 6 JUFO2 in last five years. Additionally, there is a variety of other publications of lesser impact. The average output (0.58 journal papers per academic per year) is too low. Only 3 IEEE and 1 EPSR papers were listed. The goal should be set to at least one top journal publication (JUFO2 or JUFO3) per year per academic.

Research is mainly focused on applied science and is realized as industrial and TEKES funded short term projects. The research should be more evenly balanced between basic and applied research.

On the positive side, the publications together with international parties have increased significantly (to 40%). International collaboration is strong, with lot of short visits abroad and lot of expert assignments abroad. This increases international visibility. Also, national collaboration is good.

Researcher training

Numerical rating: 4

In last five years, six doctoral students have graduated. However, three out of those six thesis counted as output of the research group are not in the area of smart energy systems. The average 1.2 doctoral students graduated per year is low when compared with the number of professors (0.24 doctors per year per professor) and the number students in the doctoral program.

The intake of doctoral students has grown significantly (12+29 new students were taken into the doctoral program in 2010-2014). Also, there has been an increase the number of foreign students. However, only about one fourth of the doctoral students (13.52 out of 41) are financed and working at the university. Other students are either self-financed or studying part time causing delays on the graduation.

Research environment and training seems to be heterogeneous in the group. Some subgroups have a good practice to have co-supervisor for doctoral students. This should be taken as common practice on all subgroups.

Doctoral students participate common doctoral courses of the university. Courses and study plans are designed jointly by each doctoral student and the supervisor. The tenure track opportunity for doctoral students seems to be unclear and should be clarified.

Doctoral students participate industrial projects what is good but may prolong the studies and affect the dissemination of research. Also, short term industrial projects with varying research focus may cause challenges to doctoral students with their doctoral thesis.

Research environment

Numerical rating: 3

The SES research group is missing its unique opportunity to establish joint research initiatives by utilizing its wide range of expertise. Instead, each professor seems to operate by its own. There is no joint research strategy or goal for the SES research group.

External funding in last five years is €2.64M that represents some 34% of total funding. The main external funding sources are TEKES €960K, national enterprises €621K, regional authorities €582K, EU €260K. Only €50K from Academy of Finland. Thus, the SES research group seems to focus mainly on the applied research projects. The research group should find partner within the university or outside, to join the efforts in applying also money for the basic research. External funding is approximately €54K/academic/year – this is very low, it should be in excess of €220K/academic/year.

There are a number of short visits abroad. Prolonged visits would be more beneficial. There is some expert involvement internationally in particular in organising national and international conferences and reviewing papers for those.

Significant involvement in national projects (30) however only in 22% the SES research group is leading the project. The research group collaborates with all leading national universities.

There is very modest expert involvement at national level except for evaluating and inspecting doctoral theses.

Societal impact of research

Numerical rating: 4

The SES group has notable and diverse collaboration with local industry with some practical outputs.

On the other hand, the SES group has otherwise less societal impact than other evaluated research groups of the Vaasa University. No records on societal impact on the areas such as lectures to public audience, media presence, or popularization of science. The research group seems not to have any plans on that area either.

Overall rating of research group

Numerical rating: 3

Since the evaluation team failed to see the SES research group functioning as a group with common vision and goals, the overall rating is set to 3. There would be a great opportunity to set up joint research projects around the expertise areas of the professors if the group would take the initiative. The new EBIC (Electricity Business Innovation Center) would also contribute this greatly by creating excellent ecosystem for future interdisciplinary research projects, on the Energy focus theme of the Vaasa University.

Research focus seems to be on applied research and short term contracts. External funding is still low.

Panel's recommendations for the future

To set higher ambition level on their publication activity, both on the number of publications and in particular on the JUFO rated publications. Especially the group should aim on the JUFO3 publications.

To ensure further integration of four areas of research currently pursued within the group.

To facilitate and encourage longer visits by younger members of staff to overseas institutions and invite foreign leading academics for short visits and research seminars to students and staff.

4.5.5 SC-Research

This is a very small research group, with only a few people involved. It is in our opinion too small to be evaluated in this format. In consequence, we have not provided an overall mark for this group, neither a mark for Research Training because it is not applicable.

Quality of research

Numerical rating: 4

The group was established in 2002 and became a part of Vaasa University in 2012. The core research areas of the group are service innovation, user driven innovation, innovation policy and IP protection and management. The number of publications related to the number of researchers involved is about the same as the other research groups, about 1 journal article per person and year and additional conference papers. During the years 2012-2014 the group produced 14 research publications. But only one publication is JUFO 3 and four is JUFO 2.

The group has a strong international reputation with collaborations with major world leading universities (MIT, Harvard, NSF and CSC) and with industry and public sector. The subjects are relevant for innovation, business and economy in the world and so is their future focus on industrial renewal by digitalisation and data innovation. They have had several large Tekes projects both with international partners and national partners and a significant part of the publications are published with international colleagues (36%) and high number of citations of Meyer (google scholar).

The research is well focused and related to the field of innovation and management research and is performed in an interdisciplinary approach. Even if there are international co-operations, with some long visits to Vaasa and a good list of collaboration partners abroad, the international activities are limited. For example there are no experts assignments at all except from assignments in conferences. This is a mismatch to their strategic goal to “conduct highest quality research” in their focused areas.

Researcher training

Numerical rating: NOT APPLICABLE

The group does not have any PhD students. In consequence, the research training is under-critical to be fairly judged on this assessment format.

Research environment

Numerical rating: 4 (for the limited amount of activities they are doing)

There are no budgetary funds for the SC-research group, which indicates that the group is not prioritised by Vaasa University. This is confirmed by the members of the group who does not feel at home in Faculty of Technology. This makes it hard to build up a good research environment. In addition we think the group is “unstable” today and too much dependent on one person Jari Kuusisto, who is less active in the group today because of his task as acting rector.

There is collaboration with international researchers that contribute into the research environment of the group like: MIT, Harvard Business Schools, Chinese Academy of Sciences, Erasmus University in Rotterdam, Universities of Kent and Brighton, etc. This is the main strength of the group in terms of research environment.

Societal impact of research

Numerical rating: 6

Societal impact is very high including co-operation with large number institutions within Finland and abroad. The group has been involved in different assignments, e.g. Impact evaluation and organisational development of Tekes international offices and services; A number of assignments from the Ministry of Employment and Economy; In a task from the European Commission and Evaluation of Research Centres in Norway. They also advice industrial partners in business renewal and they do speeches and contributions to important conferences (also held by governments) to advice.

Overall rating of research group

Numerical rating: NOT APPLICABLE

It is clear that this research group is too small to be able to perform well according to the strategy of the university. In addition, with no budgetary funds it is not likely that the group will be able to grow and create a critical mass. Today the result of the group is totally dependent on few individuals in particular on Jari Kuusisto. In consequence it can't be evaluated as a group on the format for this evaluation process.

However, the research represented by the SC Research group is relevant, actual and in line with the strategy of the university.

Panel's recommendations for the future

To move the group from Faculty of Technology to Faculty of Business Studies or to the Levón Institute, where it can be merged with research groups that are in line with the research and competencies they have today. This will make them more properly anchored within the university. This is a two-way process, where the group themselves has to investigate and consider where they best fit in and the university has to consider how the competencies available in the group could best contribute to the strategy and development of the university.

4.6 Summary table of the numerical ratings

Evaluation panel	Research group of assessment	Quality of research	Researcher training	Research environment	Societal impact of research	Overall rating of research group
Panel of Administrative Sciences and Humanities	Deliberative Welfare Policy Management	5	5	4	6	5
	Practices and Discourses of Management	5	4	5	6	5
	Social and Cultural Phenomena	4	4	3	4	4
Panel of Business Studies	Auditing and Control in Accounting	5	4	4	4	5
	Business Law, Information and Knowledge	4	4	4	6	4
	Consumption Research and Customer Value Creation	4	4	4	4	4
	Finance and Financial Accounting Research Group	5	6	6	4	5,5
	Human Resource Management	6	6	6	5	6
	Intangible Capital Research Group	5	4	4	4	5
	International Business and Marketing	5	5	5	4,5	5
	Personality Approach to Leadership and Organizational Behavior	3,5	4	3	3	N/A
	Networked Value Systems	5	5	6	6	5,5
Panel of Technology	Mathematics and Statistics	6	5	3	2	5
	Renewable Energy	4	3	4	5	4
	SC-Research	4	N/A	4	6	N/A
	Smart Electric Systems	3	4	3	4	3



CWTS BIBLIOMETRIC REPORT

Meaningful metrics

Research performance analysis for the University of Vaasa 2009-2013/14

September, 2015

Final version



Universiteit
Leiden



June, 2015
CWTS B.V.
Leiden University

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General parameters of the bibliometric study

Database:	All publications in Web of Science Core database
Classification system:	Web of Science journal subject categories
Publication window:	2009-2013
Publication types:	Articles, Review, Letters
Citing publications:	All publication types
Citation window:	Variable length until and including 2014
Letters:	Included (weight 0.25)
Counting method:	Fractional counting
Self-citations:	Excluded
Top indicators:	top 10%

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Table of contents

Executive summary	7
1. Introduction	9
2. Data collection and coverage.....	11
2.1. Initial database structure	11
2.2. Bibliometric approach	11
2.3. Coverage of publications	12
2.4. Bibliometric indicators overview	13
3. Results.....	15
3.1. Aggregated publication output and citation impact.....	15
3.1.1. University of Vaasa overall results.....	15
3.1.2. University of Vaasa by Institute	16
3.1.3. University of Vaasa by Publication year	16
3.1.4. University of Vaasa by research area.....	19
4. Main findings.....	21
Appendix I. Bibliometric indicators.....	22
A1.1. General Matters	22
A1.2. Output indicator	22
A1.3. Impact indicators	23
Self-citations	23
Counting method.....	23
Un-normalized indicators of citation impact	23
Normalized indicators of citation impact	23
Publications belonging to multiple fields	25
Limitations of field normalization	25
Indicators of journal impact.....	26
A1.4. Indicators of scientific co-operation	26



June, 2015
CWTS B.V.
Leiden University

Appendix II. Calculation of field-normalized indicators	28
Appendix III Overall Statistics	30

Executive summary

The University of Vaasa (UVA) has supplied CWTS with data extracted from the Web of Science (WoS) for usage within our CWTS WoS database information system. We used only 'citable items' which are comprised of 'articles', 'reviews' and 'letters'.

CWTS computed a fixed set of the most important bibliometric indicators. On the basis of these indicators we analyzed UVA. First we analyzed the level of coverage per unit of analysis for this body of work within the WoS. This we do on the basis of the share of citations given by these papers to publications found in the WoS. If this level is sufficiently high (50% or higher) the unit of analysis is put up for impact analysis. We found two of the institutes ('Faculty of Philosophy' and 'Levón Institute') within the university to lack the required level. The level of coverage for the university as a whole and two faculties ('Faculty of Business Studies' and 'Faculty of Technology') was deemed acceptable.

At the level of the university as a whole we found that the indicators pointed to a performance on the level of world average.

On the level of the faculties analyzed, we found that the 'Faculty of Technology' outperforms the 'Faculty of Business Studies' on the whole set of bibliometric indicators.

When we presented the data evolution per year per faculty for the Mean Normalized Citation Score (MNCS) impact indicator we found that 'Faculty of Business Studies' was on the up and 'Faculty of Technology' showed a downward inclination. The latter was deflected towards the end of the analysis period when it regained the upward slope.

For now we can say that the world average results for 'Faculty of Technology' over the whole period are more influenced by the better results in previous years as opposed to those in later years, dropping under world average in 2011-2012.

Most important scientific research categories within the university were, in that order: 'Management', 'Business', 'Business, Finance' and 'Mathematics'. These three research fields account together for nearly 50% of total university output. Two of these fields ('Business' and 'Mathematics') were highly cited, the largest ('Management'), with a share of some 20% was averagely cited.

There is a mismatch between the MNCS and the Mean Journal Citation Score (MNJS) in as much as the impact of the work is higher than the overall impact of the journals published in. This means that on average the work of Vaasa University in the journal mix published in, is cited better than the total of publications in these journals.

As a rule of thumb, better cited journals are more visible and therefore attract more citations for the publications therein. As a result it might be worthwhile to develop a publication strategy more geared towards publishing in the higher ranking journals, if and when available.

1. Introduction

The University of Vaasa (UVA) has requested the Centre for Science and Technology Studies (CWTS) of Leiden University to perform this bibliometric analysis. The goal of the project is to gain concrete and detailed insight into the bibliometric performance of the research publications of UVA. Furthermore, two faculties and a research profile are considered for the analysis. These units of analysis represent the classification system employed in the Web of Science (WoS). The results of the analysis performed by CWTS are presented in this report.

Our report focuses on the publication output of UVA, two faculties and a research profile during 2009-2013. The citation impact of these publications is measured during the time period with one year added to allow 2013 publications to gather citations and is compared to worldwide reference values. The study is based on a quantitative analysis of scientific articles, reviews and letters published in international journals covered by WoS.

The objective of our analysis is to assess the publication activity and international impact of UVA researchers and the publication profiles of individual disciplines and their areas of research.

The report comprises of 3 further sections and 3 appendices, along with brief bibliometric performance reports for UVA, each discipline and research area included in the analysis. Section 2 describes the initial data structure. Furthermore, the final data for the study is presented, along with an overview of internal coverage, for every unit of analysis. Section 3 reports the results for UVA and two faculties in terms of overall performance and time trends. A special sub-section in the results is dedicated to the main fields of activity of UVA. Section 4 describes the main findings of our analyses. A brief overview of the methodology employed at CWTS and of the bibliometric indicators that have been calculated in the study are included in Appendix I and II. Appendix III provides more detailed results for the trend analyses.



June, 2015
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2. Data collection and coverage

Data acquisition is a crucial step in any bibliometric analysis. It entirely determines the level of analysis and meaning of the statistics that are calculated.

2.1. Initial database structure

The initial data comprises of the data provided by UVA to be used in this analysis that have been selected from the Web of Science Core collection (WoS) database, which is produced by Thomson Reuters. The matched data have been provided checked by UVA.

2.2. Bibliometric approach

Our CWTS Citation Index (CI) system will be used for these analyses. The core of this system is comprised of an enhanced version of Thomson Reuters Scientific/Institute of Scientific Information's (ISI) citation indexes: Web of Science (WoS) version of the Science Citation Index, SCI (indexed); Social Science Citation Index, SSCI and Arts & Humanities Citation Index, AHCI.

We therefore calculate our indicators based on our in-house version of the WoS database. WoS is a bibliographic database that covers the publications of about 12,000 journals in the sciences, the social sciences, and the arts and humanities. Each journal in WoS is assigned to one or more subject categories.

Each publication in WoS has a document type. The most frequently occurring document types are 'article', 'book review', 'correction', 'editorial material', 'letter', 'meeting abstract', 'news item', and 'review'.

In the calculation of bibliometric indicators, we only take into account publications of the document types 'article', 'review' and 'letter'. In general, these three document types cover the most significant publications. For this reason, only those document types have been considered in the final selection, as it has been already mentioned in the previous subsection.

In addition, publications in multidisciplinary journals which do not have sufficient references to WoS-covered non-multidisciplinary journals cannot be assigned to a subject category and hence are excluded from the analysis. Letters are assigned a weight of 0.25 in the analysis because of their erratic cited behavior.

The final outcome of the data selection process comprises a table in which we have the UT (unique publication identifier in the WoS) and the Unit of analysis variable which allows to analyze data not only the level of the entire university but also on the level of administrative elements or research departments that make up the university as a whole. On the basis of the UT-identifier we can collect bibliographic and bibliometric data on the papers put up for analysis.

2.3. Coverage of publications

The first step is to determine the internal coverage for UVA and its units of analysis (Faculties and Institutes). The internal WoS coverage is defined as the proportion of the references that point to publications covered by WoS. To gain insight in the CI coverage of the publications included in the study, we determined to what extent they themselves cite CI papers and to what extent other non-CI documents.

The internal coverage provides insight into the citing practices of UVA and, in particular, how well CI output reflects the scholarly practice at UVA and the relevance of the WoS in that respect. This we can use then as an indication of how well WoS is geared towards providing robust indicators for the analysis. We generally require the Citation Index coverage, in the interest of the robustness of the analyses, to be higher than 50%. This level means that within the WoS a larger percentage of the total context of the publications are visible than are invisible.

The internal coverage at the level of the whole university and at the level of faculties/institutes, as well as the total output, counted both fractional and whole, is presented in Table 2-1 on the next page.

Table 2-1 Internal coverage for UVA

Institute	p	p (fractional)	Internal coverage
Faculty of Business Studies	98	97.50	64%
Levón Institute	2	2.00	45%
Faculty of Philosophy	12	12.00	25%
Faculty of Technology	95	94.50	49%
University of Vaasa		206	57%

The results indicate a sufficient overall coverage for UVA. More than 50% of the documents cited by the articles, reviews and letters of UVA are published in sources covered by WoS.

On the departmental level of the university we find the elements shown in red to have an insufficient internal coverage level to be included in the study. The 'Faculty of Technology' has been granted a discretionary pass.

Bear in mind however that an internal coverage of nearly 50% is not a strong within WoS representation and the results should be interpreted with some caution especially if and when compared to other units of analysis with a higher index for internal coverage. However given the number of publications (nearly as high as the "Faculty of Business Studies"), the share in total output of the university and the coverage indices of the two remaining units of analysis not being that wide apart, we thought it analytically defensible to include this unit of analysis in the report.

We will come to see that the results for these two institutes in terms of impact are not an immediate motive to cast the results for "Faculty of Technology" aside as being totally non-representative and incomparable to "Faculty of Business Studies". Had the results been on either side of the possible extremities of the impact scale, meaning either extremely high or extremely low, this would have cast doubt on the feasibility of this exercise. Since this is not the case, we only call for some caution in interpreting these results too hard and fast but we have enough confidence in the outcomes to attribute meaning to them.

2.4. Bibliometric indicators overview

The indicators below are grouped by dimension. More relevant information is provided in Appendix I and Appendix II.

Table 2-4 Overview of CWTS bibliometric indicators

Indicator	Dimension	Definition
P	Output	Total number of publications.
TCS	Impact	Total number of citations.
MCS	Impact	Average number of citations.
TNCS	Impact	Total normalized number of citations.
MNCS	Impact	Average normalized number of citations.
PPtop10%	Impact	Proportion of publications that belong to the top 10% of their field.
PnC	Impact	Proportion of uncited publications.
MNJS	Journal impact	Average normalized citation impact of a journal.

In this report, the following indicators will be provided for each unit of analysis: P, TCS, MCS, TNCS, MNCS, PPtop10%, PnC, and MNJS.

3. Results

In this section, the results of the performance analysis are reported. Section 3.1 shows the overall results, whereas the next three sections reveal the analysis of the UVA fields of activity. Using bibliometric techniques, the present study analyses the publication output from 2009 to 2013 and citation impact of these publications up to 2014. The impact, as measured by citations (excluding self-citations), is compared to worldwide reference values.

3.1. Aggregated publication output and citation impact

The results of output and impact at the level of UVA are presented in the subsection below. The overall results for each discipline, along with its research areas are presented in the following subsections.

3.1.1. University of Vaasa overall results

Table 3-1 Performance indicators for UVA overall

	P	TCS	MCS	TNCS	MNCS	PP top 10%	PnC	MNJS
UVA	206	665	3,23	212,60	1,03	10%	26%	0,93

The total picture that transpires from this table is that overall UVA performs on or close to the world level. This table includes data of the institute and faculty that have an internal coverage deemed insufficient for robust analyses.

If we leave 'Faculty of Philosophy' and 'Levón Institute' (the institute and faculty that have a too low CI-Coverage) out of the analysis, we get slightly more favorable results (**Table 3-2**).

Table 3-2 Performance indicators for UVA overall, selected units that meet CI-coverage requirements only.

	P	TCS	MCS	TNCS	MNCS	PP top 10%	PnC	MNJS
UVA	192	647	3,37	201,45	1,05	10%	25%	0,93

The visibility, defined by the share in the top 10% highest cited publications is spot on the world level and the MNCS is slightly above world average.

The journal mix published in is slightly under world average. As a rule of thumb publications in highly cited journals attract more citations because of the higher visibility of highly cited journals.

Therefore it might be beneficial for UVA to publish more in higher ranking journals, if and when possible.

3.1.2. University of Vaasa by Institute

We break down the university results and focus on the two faculties that allow calculation of robust results in **table 3-3**

Table 3-3 Performance indicators for institutes

Institute	P	TCS	MCS	TNCS	MNCS	PP top 10%	PnC	MNJS
Faculty of Business Studies	97,50	278,50	2,86	96,91	0,99	9%	31%	0,90
Faculty of Technology	94,50	368,50	3,90	104,55	1,11	12%	19%	0,96

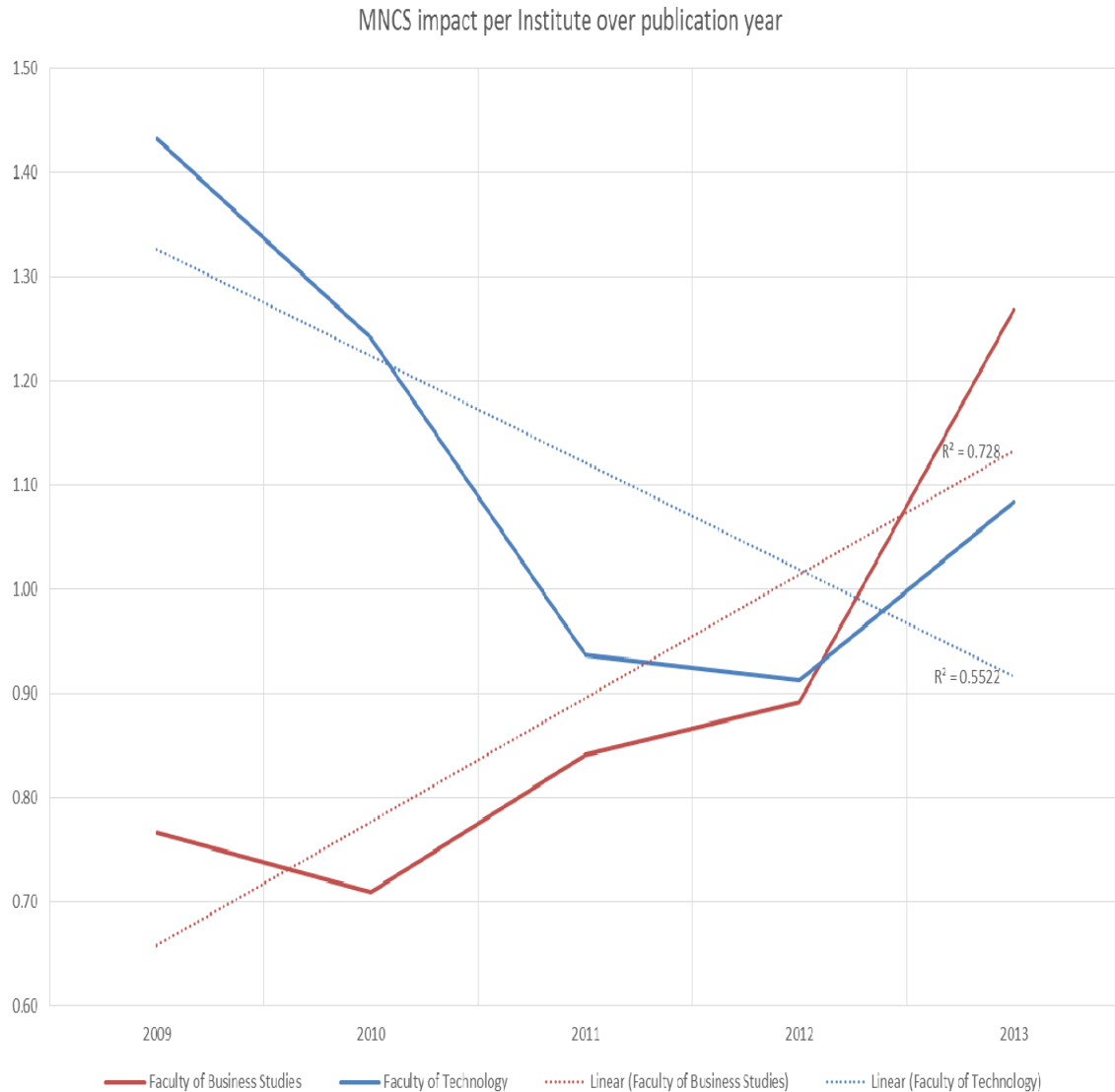
Again we can say that the faculties show a level of performance that's to a large extent in line with the average world level except for the journal impact. 'Faculty of Technology' outperforms 'Faculty of Business Studies' in the whole range of bibliometric indicators, since they are on average more highly cited, which results in a higher MNCS of some 12 impact index points, they have a higher visibility of 3% points and they publish in better cited journals.

The mismatch between the impact level of the institutes versus the journal published in is decidedly more marked for the 'Faculty of Business Studies' than for 'Faculty of Technology'.

3.1.3. University of Vaasa by Publication year

In contradiction to what has been shown up to this point in the report about the way the two faculties relate to each other on the impact dimension, the development trend show a different picture, which we will come to see on the next page.

Figure 3-1



If we look at the development of the trend in the MNCS for the two faculties of UVA in the publication years under analysis, we can see that ‘Faculty of Technology’ shows a downward inclination, whereas ‘Faculty of Business Studies’ shows an upward pointing trend line. The way they develop has a ‘breakeven point’ in 2012. Here they are practically equal for a moment before the upward slope of ‘Faculty of Business Studies’ intensifies and the deflected slope of ‘Faculty of Technology’ is once again upward bound, be it at a lower angle.

These are trend lines on the basis of the least squares method. Which means that the trend lines are the result of defining straight lines (a ‘model’) which have the smallest distance to their original data points in terms of the sum of squared distances.

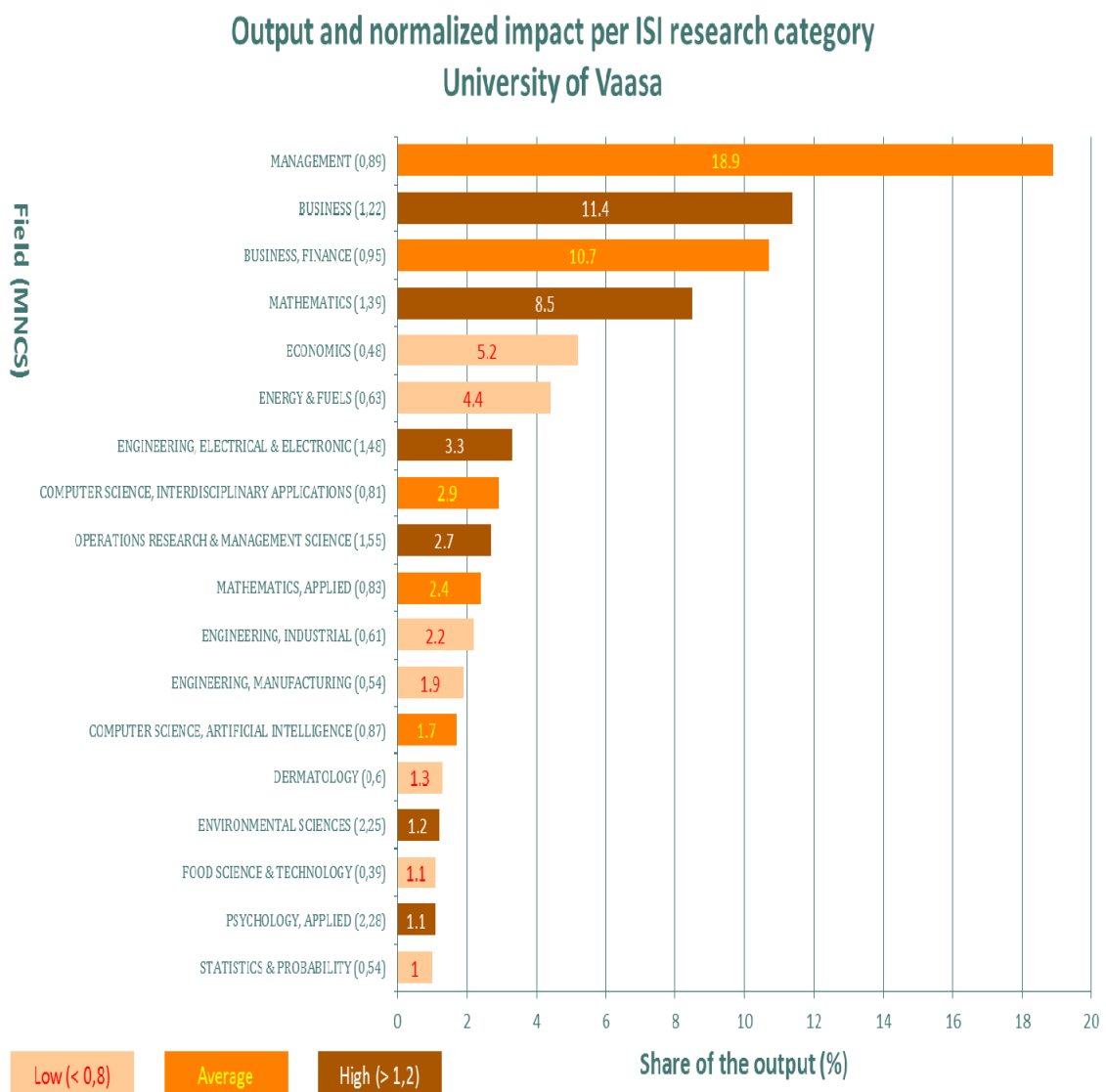
The R^2 (R Square) estimates to what extent the proposed model defined by the trend line captures the observed variety in the data. In both cases this amounts to more than 50% (as the R square alternates between 0 and 1) and in the case of 'Faculty of Business Studies' this explains by far the bulk of the changes over time.

On the basis of this analysis we may (cautiously) say that the way the MNCS is developing over time for 'Faculty of Business Studies' is upward bound over time. For the 'Faculty of technology' the opposite goes. Be it that at this point in time we can see that at the very end of the period under investigation the downward slope seems to be deflected into an upward one. However for now the overall impression remains one of decline.

3.1.4. University of Vaasa by research area

Error! Reference source not found.2 depicts the relationship between output share and impact (MNCS) for the research areas UVA is active in. Only research areas which contribute one 1% or more to total output are included in the graph.

Figure 3-2



The most prominent research area UVA is active in is 'Management' which is cited under world average. Out of four the top share research areas (together almost 50% of the distribution) this is the research area with the lowest score only just hanging on the 'Average' label. 'Business' and

'Mathematics' are positioned well above world average. Six out of eighteen categories are highly cited, five are average and seven are modestly cited.

The top of the distribution in this graph is by and large dominated by 'Economics & Business'-like scientific areas. 'Engineering' related categories are less prominent in the middle of the distribution. In the tail of the distribution we find research areas we don't logically link directly to either economics or technology related scientific research but appear as a byproduct of publications in journals that are active across more research areas. Therefore they show the borderline of the research where related disciplines are toughed upon.

4. Main findings

The University of Vaasa performs on the world average level. If we leave 'Faculty of Philosophy' and 'Levón Institute' out of the analyses on the University level, the results improve slightly but remain to all intents and purposes on the world average level. So while this observation does not say anything about the 'Faculty of Philosophy' and 'Levón Institute' themselves it gives some indication on their bibliometric contribution to the bigger picture of the University of Vaasa as a whole.

In an overall view on the whole period 'Faculty of Technology' outperforms the 'Faculty of Business Studies' on the whole range of bibliometric indicators. However if we zoom in on the development over time of the MNCS indicator, this picture is reversed. The higher impact level of 'Faculty of Technology' appears to be based on success in the past rather than impact at present and 'Faculty of Business Studies' overtakes the other faculty around 2012.

The downward trend we can model on this development over time for 'Faculty of Technology' seems to deflect at the end of the analysis period when this faculty catches the way up again. 'Faculty of Business Studies' appears to be trending upwards strongly over time.

The most prominent research area is 'Management' which has a modest impact. The four scientific categories with the highest contribution to the university as a whole account for nearly 50% of total output. These are predominantly 'Economics & Business'-related scientific fields. Of these, two are highly cited and two are on the average level.

Appendix I. Bibliometric indicators

In this appendix, we describe the methods underlying the present bibliometric analysis.

A1.1. General Matters

The analysis in this report is based on publications and citations received by those publications covered by WoS. As mentioned beforehand, only the document types 'article', 'review' and 'letter' are considered. These document types account for 71.33% of total WoS output. WoS includes other 32 distinct document types and 27 of these document types are assigned to at most 1% of all publications in WoS. The other 5 frequent document types are 'meeting abstract', 'book review', 'editorial material', 'note' and 'news item'.

The articles, reviews and letters also attract more than 96% of the total citations in WoS. Nonetheless, the indicators in the report are computed using all the citations received by the publications in the analysis, regardless the document type of the citing paper. For example, we count all the citations received by a given article in the analysis, including the citations from other articles, reviews, and letters but also meeting abstracts, editorial materials, etc.

It needs to be mentioned that this approach is different from the one used in Leiden Ranking, where only articles and reviews are used in the analysis. In addition, only citations originating from articles and reviews are counted, not from other document types.

Furthermore, the present analysis uses a variable-length citation window. We therefore account for all citations, from 2009 until 2014, received by the publications included in the analysis. For publications in 2009, the citations from 2009 until 2014 are considered and for publications in 2010, the citations up to 2014 from 2010 onwards are considered and so on until finally, for publications in 2013, we consider their citations in 2013 and 2014. Leiden Ranking uses a variable-length citation window as well, though the period of analysis is different. For example, Leiden Ranking 2015 considers publications in the period 2010-2013 and their citations until the end of 2014.

A1.2. Output indicator

The publication output indicator, denoted by P , measures the total publication output of a research unit. It is calculated by counting the total number of publications of a research unit, including only publications covered by WoS. We stress that research articles, review articles and letters are the only publication types that are taken into account. Other publication types, such as editorial material, meeting abstracts, and book reviews, are not included.

A1.3. Impact indicators

A number of indicators are available for measuring the scientific impact of the publications of a research unit. These indicators relate to the number of times publications have been cited.

Self-citations

In the calculation of all our impact indicators, we disregard author self-citations. We classify a citation as an author self-citation if the citing publication and the cited publication have at least one author name (i.e., last name and initials) in common. In this way, we ensure that our indicators focus on measuring only the contribution and impact of the work of a researcher on the work of other members of the scientific community. Sometimes self-citations can serve as a mechanism for self-promotion rather than as a mechanism for indicating relevant related work. The impact of the work of a researcher on his own work is therefore ignored.

Counting method

In computing the impact indicators, we use the full counting method. This means that publications are always fully assigned to research units, regardless of the collaboration nature of the authorship, e.g., single-authored, two authors from the same research unit, or two or more authors from the same or different countries. This is opposed to the fractional counting method, where depending on the co-authorship nature of a publication only a certain fraction of the publication is assigned to the research unit. Impact indicators calculated using full counting tend to have higher values than impact indicators calculated using fractional counting. The main advantage of full counting over fractional counting is that full counting is usually perceived as more intuitive and easier to interpret. There is however some risk that full counting gives results in which certain scientific fields are favored over others.

Un-normalized indicators of citation impact

The total citation score (TCS) indicator gives the total number of citations received by the publications of a research unit. The mean citation score (MCS) indicator equals the average number of citations per publication. This indicator is obtained by dividing TCS by P , the total number of publications.

The PnC indicator counts the number of publications that have received no citations, and the PPnC indicator reports the number of uncited publications as a proportion of the total number of publications of a research unit.

Normalized indicators of citation impact

Usually, a recent publication has received fewer citations than a publication that appeared a number of years earlier. Moreover, for the same publication year, publications in for instance mathematics have usually received a much smaller number of citations than publications in for

instance biology. This is due to the different citation cultures in different fields. To account for these age and field differences in citations, we use normalized citation indicators.

Each journal in WoS is assigned to one or more subject categories. These subject categories can be interpreted as scientific fields. There are about 250 subject categories in WoS. Publications in multidisciplinary journals such as *Nature*, *PLoS ONE*, *Proceedings of the National Academy of Sciences*, and *Science* are individually allocated, as much as possible, to subject categories on the basis of their references. The assignment of these publications to subject categories is done proportionally to the number of references pointing to a subject category. Impact indicators are calculated taking into account this assignment of publications in multidisciplinary journals to subject categories.

The mean normalized citation score indicator, denoted by MNCS, provides a more sophisticated alternative to the MCS indicator. The MNCS indicator is similar to the MCS indicator except that it performs a normalization that aims to correct for differences in citation characteristics between publications from different scientific fields and between publications of different ages. To calculate the MNCS indicator for a unit, we first calculate the normalized citation score of each publication of the unit. The normalized citation score of a publication equals the ratio of the actual and the expected number of citations of the publication, where the expected number of citations is defined as the average number of citations of all publications (i.e., research articles and review articles) that belong to the same field and that appeared in the same publication year. As mentioned before, the field (or the fields) to which a publication belongs is determined by the WoS subject categories of the journal in which the publication has appeared.

The MNCS indicator is obtained by averaging the normalized citation scores of all publications of a unit. If a unit has a value of one for the MNCS indicator, this means that on average the actual number of citations of the publications of the unit equals the expected number of citations. In other words, on average the publications of the unit have been cited equally frequently as publications that are similar in terms of field and publication year. An MNCS indicator of, for instance, two means that on average the publications of a unit have been cited twice as frequently as would be expected based on their field and publication year. We refer to Appendix II for an example of the calculation of the MNCS indicator.

In addition to the MNCS indicator, we also have the TNCS (total normalized citation score) indicator. This indicator is calculated by summing the normalized citation scores of all publications of a research unit. The TNCS indicator equals the product of the MNCS and P indicators.

Since the MNCS indicator relies on averages and since citation distributions tend to be highly skewed, the MNCS indicator may sometimes be strongly influenced by a single very highly cited publication. If a unit has one such publication, this is usually sufficient for a high score on the MNCS indicator, even if the other publications of the unit have received only a small number of citations.

Because of this, the MNCS indicator may sometimes seem to significantly overestimate the actual scientific impact of the publications of a research unit.

Therefore, in addition to the MNCS indicator, we use another important impact indicator. This is PPTop10%, the proportion of the publications of a research unit that belong to the top 10% mostly frequently cited publications in their field and publication year.

For each publication of a research unit, the PPTop10% indicator determines, based on the number of citations of the publication, whether the publication belongs to the top 10% of all publications in the same field (i.e., the same WoS subject category) and the same publication year. The PPTop10% indicator equals the proportion of the publications of a research unit that are in the top 10% of their field and publication year. If a research unit has a value of 10% for the PPTop10% indicator, this means that the actual number of top 10% publications of the unit equals the expected number. A value of 20% for the PPTop10% indicator for instance means that a unit has twice as many top 10% publications as expected. We note that in addition to the PPTop10% indicator we also have the Ptop10% indicator. This indicator equals the number of top 10% publications of a research unit. The Ptop10% indicator is obtained by multiplying the PPTop10% indicator by the P indicator.

To assess the impact of the publications of a research unit, our general recommendation is to rely on the combination of the PPTop10% indicator and the MNCS indicator. These two indicators are strongly complementary to each other. The MCS indicator does not correct for field differences and should therefore be used only for comparisons of units that are active in the same field.

Publications belonging to multiple fields

As explained above, a publication may belong to multiple fields (i.e., multiple WoS subject categories). In that case, the publication is fractionally assigned to each of the fields to which it belongs and normalized impact indicators are calculated accordingly. For instance, a publication may belong to two fields. In one field the number of citations of the publication may be twice above expectation, while in the other field the number of citations may be at the expected level. The normalized citation score of the publication then equals to $(2 + 1) / 2 = 1.5$. Likewise, a publication may belong to two fields and may be a top 10% publication in one of these fields but not in the other. In that case, the publication is considered to be a top 10% publication with a weight of 0.5. This for instance means that the publication contributes a value of 0.5 to the Ptop10% indicator.

Limitations of field normalization

It is important to emphasize that the correction for field differences that is performed by the MNCS and PPTop10% indicators is only a partial correction. As already mentioned, these indicators are based on the field definitions provided by the WoS subject categories. It is clear that, unlike these subject categories, fields in reality do not have well-defined boundaries. The boundaries of fields

tend to be fuzzy, fields may be partly overlapping, and fields may consist of multiple subfields that each have their own citation characteristics. From the point of view of citation analysis, the most important shortcoming of the WoS subject categories is their heterogeneity in terms of citation characteristics. Many subject categories consist of research areas that differ substantially in their density of citations. For instance, within a single subject category, the average number of citations per publication may be twice as large in one area compared with another. The MNCS and PPTop10% indicators do not correct for this within-subject-category heterogeneity. This can be a problem especially when using these indicators at lower levels of aggregation, for instance at the level of departments or individuals.

Indicators of journal impact

We use the total and mean normalized journal score indicator, denoted by TNJS and MNJS, to measure the impact of the journals in which a research unit has published. For this, we first calculate the normalized journal score of each publication of the unit. The normalized journal score of a publication equals the ratio of on the one hand the average number of citations of all publications published in the same journal and the same year and on the other hand the average number of citations of all publications published in the same field (i.e., the same WoS subject category) and the same year. The TNJS indicator is obtained by summing the normalized journal scores of all publications of a research unit, while the MNJS indicator is obtained by averaging the normalized journal scores of all publications. The MNJS indicator is closely related to the MNCS indicator. The difference is that instead of the actual number of citations of a publication, the MNJS indicator uses the average number of citations of all publications published in a particular journal. The interpretation of the MNJS indicator is analogous to the interpretation of the MNCS indicator. If a unit has a value of one for the MNJS indicator, this means that on average the unit has published in journals that are cited equally frequent as would be expected based on their field. Likewise, a value of two for the MNJS indicator means that on average a unit has published in journals that are cited twice as frequently as would be expected based on their field.

A1.4. Indicators of scientific co-operation

Indicators of scientific collaboration are based on an analysis of the addresses listed in the publications produced by a research unit. We first identify publications authored by a single institution ('no collaboration'). Subsequently, we identify publications that have been produced by institutions from different countries ('international collaboration') and publications that have been produced by multiple institutions from the same country ('national collaboration'). These types of collaboration are mutually exclusive. Publications involving both national and international collaboration are classified as international collaboration.



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Appendix II. Calculation of field-normalized indicators

To illustrate the calculation of the MNCS indicator, we consider a hypothetical research group that has only five publications. Table A1 provides some bibliometric data for these five publications. For each publication, the table shows the scientific field to which the publication belongs, the year in which the publication appeared, and the actual and the expected number of citations of the publication. (For the moment, the last column of the table can be ignored.) As can be seen in the table, publications 1 and 2 have the same expected number of citations. This is because these two publications belong to the same field and have the same publication year. Publication 5 also belongs to the same field. However, this publication has a more recent publication year, and it therefore has a smaller expected number of citations. It can further be seen that publications 3 and 4 have the same publication year. The fact that publication 4 has a larger expected number of citations than publication 3 indicates that publication 4 belongs to a field with a higher citation density than the field in which publication 3 was published.

The MNCS indicator equals the average of the ratios of actual and expected citation scores of the five publications. Based on Table A1, we obtain

$$\text{MNCS} = \frac{1}{5} \left(\frac{7}{6.13} + \frac{37}{6.13} + \frac{4}{5.66} + \frac{23}{9.10} + \frac{0}{1.80} \right) = 2.08$$

Hence, on average the publications of our hypothetical research group have been cited more than twice as frequently as would be expected based on their field and publication year.

Table A1 Bibliometric data for the publications of a hypothetical research group

Publication	Field	Year	Actual Citations	Expected Citations	Top 10% Threshold
1	Surgery	2007	7	6.13	15
2	Surgery	2007	37	6.13	15
3	Clinical neurology	2008	4	5.66	13
4	Hematology	2008	23	9.10	21
5	Surgery	2009	0	1.80	5

To illustrate the calculation of the $PP_{top10\%}$ indicator, we use the same example as we did for the MNCS indicator. Table A1 shows the bibliometric data for the five publications of the hypothetical research group that we consider. The last column of the table indicates for each publication the minimum number of citations needed to belong to the top 10% of all publications in the same field and the same publication year.¹ Of the five publications, there are two (i.e., publications 2 and 4) whose number of citations is above the top 10% threshold. These two publications are top 10% publications. It follows that the $PP_{top10\%}$ indicator equals

$$PP_{top10\%} = \frac{2}{5} = 0.4 = 40\%$$

In other words, top 10% publications are four times overrepresented in the set of publications of our hypothetical research group.

¹ If the number of citations of a publication is exactly equal to the top 10% threshold, the publication is partly classified as a top 10% publication and partly classified as a non-top-10% publication. This is done in order to ensure that for each combination of a field and a publication year we end up with exactly 10% top 10% publications.

Appendix III Overall Statistics

The following files containing the underlying data were sent with this report:

- 1 - Overall.xlsx
- 2 - Overall selected units.xlsx
- 3 - Institutes.xlsx
- 4 - Research Profile.xlsx