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ROLES AND SATISFACTION DURING INTERNSHIP PROGRAM IN ESTONIAN UNIVERSITIES

Merike KASEORG*
Lee PUKKONEN**

Abstract

This study investigates an intern as someone who is a student in training, who may be paid, but in company is a temporary employee (Tovey, 2001); internship as a supplement or complement to academic instruction in environmental science. This article reviews roles during internship and satisfaction with the internship program from two perspectives: interns from five Estonian universities and site supervisors from various companies. The data from site supervisors and interns were collected through a web-based questionnaire. Surveys were carried out during 2012-2013. The sample consists of 418 interns and 194 institutions providing internship. The study gives an overview of the situation of the internship in Estonia. The data has been discussed in the context of the related literature.

Keywords: internship, knowledge exchange, roles, satisfaction, university-industry collaborations

JEL classification: I21, L00, L20

1. THEORETICAL BACKGROUND

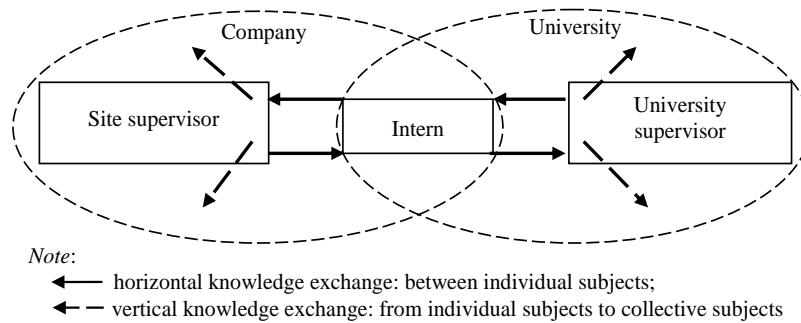
1.1. Individual and collective subjects in internship process

Articles in academic journals reflect a lot about different forms of university and industry collaborations. Mostly they talk about knowledge transfer or exchange and innovation. Knowledge transfer is as an interactive process involving the interchange of knowledge between knowledge users and knowledge producers (Mitton *et al.*, 2007). The same is translated into internship, but with a little difference. In internship, the knowledge transfer should be replaced with the term knowledge exchange because it is bilateral. In this case the result is learning from the process to all of the participants.

Collaboration between universities and industries includes many different challenges and of them, one is internship. During internship, individual subjects (such as site supervisor/employee, intern/student, and university supervisor) are closely intertwined and at the same time they all represent collective subjects (such as university or company) (Figure 1).

* Faculty of Economics and Business Administration, University of Tartu, Estonia; e-mail: merike.kaseorg@ut.ee.

** Faculty of Economics and Business Administration, University of Tartu, Estonia; e-mail: lee.pukkonen@ut.ee.



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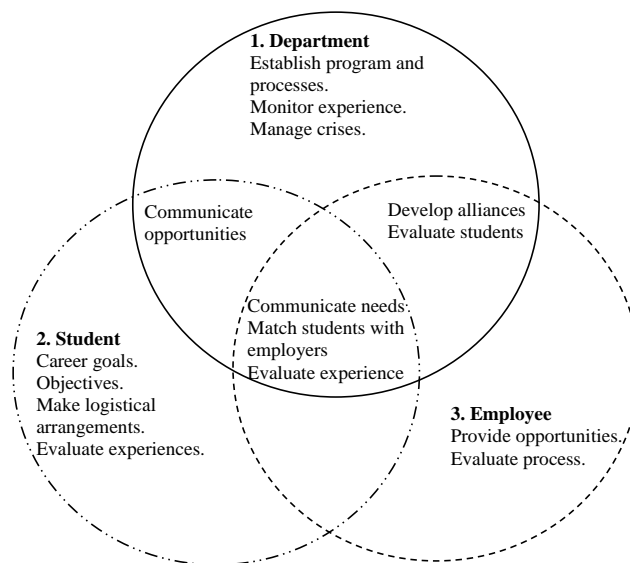
Figure no. 1 – Individual and collective subjects in internship process

Therefore we can talk about two different knowledge exchange types: horizontal (between three individual subjects during the internship) and also vertical (how much information and knowledge they will share with bigger group where they belong to, so that knowledge will become from tacit to explicit in organisational level).

Narayanan *et al.* (2010) propose that the outcomes from the internship may be of three types. They argue that outcomes of interest include (1) organizational benefits from the completion of the internship project, (2) enhanced capabilities of the company and the university, and, at the student level, (3) skill development, and career enhancement. For the employing firm, the important immediate benefits may include project completion, efficiency due to using cheaper labour, potential screening of and recruitment of the intern and, perhaps, an inflow of ideas (e.g. best practices) from the university to the company. Longer-term benefits may include a stronger tie with the university, thereby encouraging students to apply for future internships, as well as a continued inflow of ideas. For the university, completion of the project will likely result in student satisfaction and possibly student placement. Longer term, one might expect to see the university enhance its capabilities by having greater knowledge about the challenges companies address as well as a reputation for placing students in good internship positions. For the student, the outcomes will mostly focus on skill development and career opportunities. Longer-term outcomes will be better career decisions and career prospects. Therefore, the roles of site supervisor and university supervisor are not important only for student/intern learning process, but also for organizational learning.

1.2. The main roles of internship subjects

The university department or faculty normally initiates the internship program and sets the processes that are needed for maintaining successful exchange and for improving with the program. Students need to consider an internship with respect to their long-term goals and objectives, such as identifying a career in their field of interest. Students are in charge and have the responsibility of arranging different aspects of the internship such as housing and transportation. Employees provide to students meaningful work experiences that augment the students' classroom learning and work with the department when there are special issues that need resolution (Divine *et al.*, 2008). The main roles that internship subjects carry in order to make an internship as a positive experience to all of the participants are shown on Figure 2.



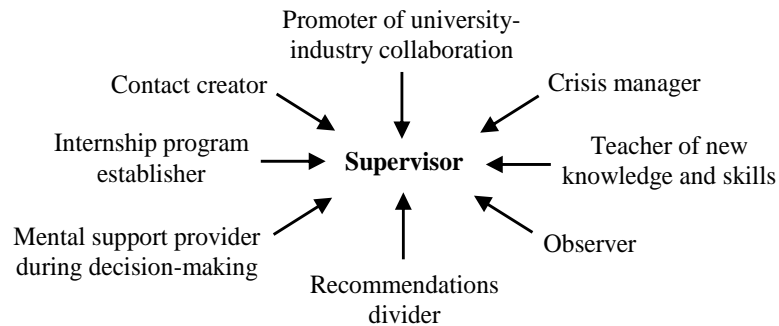
Source: Divine et al. (2008)

Figure no. 2 – University/department, student, and employee roles in internship program

Accordingly, more and more interactions between university and industry are becoming subjects of measurement and management, leading to more formal, contractual exchanges based on codified rules and regulations. Communication and interaction between universities and different industries has a fundamental role. That is why the lack of research on this subject is a serious hindrance to the design of an effective policy (Bruneel et al., 2010). University-industry links help firms to increase awareness of opportunities for commercial exploitation of publicly funded research, and facilitate the transmission of knowledge between academic and industrial scientists, thus contributing to strengthen a country's innovative performance (D'Este, 2008).

Mihail (2006) considered internship as an opportunity to close the gap between theory and practical reality. Cheng et al. (2004) brought out that internship programs provide students with needed tools and educate them to take responsibility in their future work life. Industry professionals also think that students who have internship experiences are more marketable. In analysing university internships, the general assumption is that the modern knowledge economy requires a leap in graduates' skills and educational institutions try to implement innovative reforms to provide their students with skills needed by "high performance" firms. Mihail (2006) Internships form a vital part of any student's education, giving the student a chance to hone his or her skills, interact with more experienced professionals, and practice in different areas of the field (Beebe et al., 2009).

Depending on the situation and definer of the roles, supervisors attach so many roles like head, observer, helper etc. Yaman (2013) defined supervisors' main roles as guider, bigwig, and collaboration promoter. Roles like teacher of new knowledge and skills, recommendations driver, evaluator, handled also by Vahtramäe et al. (2011). Supervisors' roles handled in current study are shown on Figure 3.



Source: authors modify from *Divine et al. (2008)*, *Yaman (2013)*, *Vahtramäe et al. (2011)*

Figure no. 3 – Site and university supervisors' roles during internship

Supervision by industry professionals could help students to learn from mistakes, learning through networking, learning from the unsystematic process of trial and error, or learning from a series of interpersonal experiences (*Marsick and Watkins, 2001*). In addition, the programs should provide students with needed skills, and educate them to take responsibility in the future work life, thus bridging the gap (*Collins, 2002*). Establishing good training programs for interns, giving interns meaningful tasks, and empowering them to manage the tasks in a more creative way could be solutions to improve future internship programs (*Cheng et al., 2004*).

1.3. Knowledge exchange in internship process

Successful internship means that all parts (individual subjects and collective subjects) learn from the process and everyone will get some new knowledge through sheering. In literature, there are two different knowledge types. Organizational knowledge is classified into explicit knowledge and tacit knowledge (*Nonaka, 1997; Nahapiet and Ghosal, 1998*). Explicit knowledge can be easily stored, retrieved, shared, and disseminated within organizations. Some of the examples of explicit knowledge are found in commercial publications, e-mail, internet, online learning platforms (*Hutzschenreuter and Horstkotte, 2010*), GroupWare, intranets, database, organisational business records and self-study material (*Srikantaiah and Koenig, 2000*). Tacit knowledge is the exact opposite of explicit knowledge (*Wong and Radcliffe, 2000; Nonaka and Takeuchi, 1991*). Tacit knowledge is an experience that is embedded in an individual, such as perspective and inferential knowledge. It includes insights, hunches, intuitions, and skills that are highly personal and difficult to formalize, and as a result are hard to communicate or share with others (*Srikantaiah and Koenig, 2000*).

In all organizations, we have knowledge, but the questions are how we can share it and how the leaders can manage knowledge. Learning occurs when people share their data, information, and explicit and tacit knowledge. The obvious transfer agent of knowledge – and of tacit knowledge in particular – is the person who has the knowledge. These knowledge experts convey their tacit knowledge by expressing their beliefs and perceptions, and by describing and demonstrating their skills and experience. *Kumar and Ganesh (2009)* define knowledge transfer as an event through which one entity learns from the experience

of another, suggesting thereby that the effect of one unit on another is in terms of the learning that the second unit experiences.

During the internship process, it is important that learning will be two-sided and two-dimensional. Two-sided means that in internship there is no such thing as one is only giver and another is receiver. It can be so with knowledge transfer when talking about some product or patent that has only one-way impact. Internship is two-sided knowledge sharing and in some situations the recipient of knowledge (as intern) can and should be the source of knowledge. Two-dimensional means that the knowledge exchange should also reach to collective level (team, unit, organization, and cluster) and individual subjects should share their experience with their organization. It is the conveyance of knowledge from one place, person, or ownership to another. Successful knowledge transfer means that transfer results in the receiving unit accumulating or assimilating new knowledge. When organisations or employees within an organisation identify knowledge that is critical to them, they can use knowledge transfer mechanisms to acquire the knowledge. They can then constantly improve it and make it available in the most effective manner for others who need it. They also can exploit it creatively or innovatively to add value as a normal part of their work (Liyanage *et al.*, 2009).

New knowledge is a crucial input factor for innovation. Therefore, not only the knowledge-producer but also other organizations such as private and public businesses, research institutions, or universities can also apply and commercialize the newly generated knowledge (Mueller, 2006). One way theorists discuss this problem is by raising the question of transfer of learning: How and under what conditions does knowledge from one context carries over into the other? However, there are factors constraining the efficacy of school-based practices for enhancing experiential learning. For one thing, students often resist it: they tend to care more about doing the work than about reflecting on it; and they often see the internship as a mode of career exploration, as a foot in the door, and not primarily as learning experience. Typical student spends some time in an organized, recognized, sometimes accredited out-of-classroom but school-sponsored learning activity: working in a business or a medical centre; performing some kind of community service; participating in an Alternative Spring Break project; engaging in field-based research to fulfil the requirements of a course. If these experiences are structured effectively and processed rigorously, they can add a great deal of value to students' learning and to the educational strength of the university. In fact, they have the potential to transform higher education, to broaden and deepen the nature of knowledge and learning that goes on in the college, and to alter the relationship between student and teacher and between university and community. However, these transformative effects depend on careful planning and execution, on avoiding the tendency to fall back on the adage that "every experience is educational," on pushing students – and faculty – to think rigorously and extensively about the intersections between theory and practice (Moore, 2010).

2. METHOD

2.1. Characteristics of the sample

Participants were from two groups: students as interns and site supervisors from various companies. Students that participated in the survey were from five Estonian universities: 47% of respondents from University of Tartu (UT), 18% from University of

Tallinn (UTLN), 16% from Estonian University of Life Science (EULS), 16% from Tallinn University of Technology (TUT) and 3% from Estonian Business School (EBS). All 418 students/interns responded to the survey, participated in full-time study. All the participated students had been interns within two years. Most of respondents 276 (66%) were female and 142 (34%) were men. By respondents age 225 were 19-23 years old (54%) and over 23 years old were 193 respondents (46%).

Companies (and site supervisors from there) were found through the university supervisors and their contacts with companies and total 194 site supervisors responded to the survey. Differentiation through the size of the company: 33% were large (more than 250 workers); 31% were medium (50-249 workers); 25% were small (10-49 workers); 11% were micro (less than 10 workers). Most of respondents were female 138 (71%) and 56 (29%) were male. 52% of all respondents were over 40 years old and 43% of all respondents had worked in company over 10 years. Positions divided: 35% were employees or civil servants, 24% were senior specialists, 24% were middle managers, and 17% of respondents were owner/senior manager/executive worker.

2.2. Research methods

Research methods were selected on the bases to involve the largest possible number of respondents. Therefore the data from site supervisors and interns was collected through a web-based questionnaire (qualitative analyse). Basis for the questionnaire were topics and keywords from the field of theoretical literature about internship and university and industry collaboration. The aim was to find previous studies that help to create informative questions. It turned out that internship has previously been studied mostly through process descriptions. Less surveys review knowledge exchange that appears when internship is well organized.

The questionnaire consists of three parts: the first part consists of general questions about assessments, attitudes, and process; the second part deals with the experience of intern; third part contains of specifying questions about site supervisor, company, or intern. Test items in questionnaire were similar in both groups because one aim was to compare those results. The first questionnaire was directed to site supervisors who actually supervised internships. The other questionnaire was designed to interns, who were full-time students. Site supervisors' questionnaire consisted of 27 questions and interns' questionnaire of 26 questions. Respondents had to answer to some questions on Likert 5-point scale, where five meant total agreement and one total un-agreement. In case of some questions was opportunity to choose between several answer options. In the end of the questionnaire was an opportunity to comment and give proposals in the field of internship programs. Many people used the opportunity to comment the topic through open questions. Respondents also had an opportunity to get feedback if they were interested.

2.3. Procedure and analysis

The pilot study was conducted during the period of 01-10 March 2013. The aim of this preliminary analyse was to test comprehensiveness and relativity of questionnaire. Pilot study was carried out with authors' personal acquaintances and colleagues. This followed by preparation of cover letters and taking contact with university supervisors. The questionnaire was web-based in Google docs and data collected during the period of 18 March-30 April 2013. Respondents were interns and site supervisors who had participated in

internship program during 2011-2013. In the beginning of the study, some of the respondents gave feedback and because of that, questionnaires were adjusted.

Authors analysed universities and faculties homepages and selected programs that differ enough. Assumption was that programs have to be full-time. E-mails were sent to all those different university supervisors and in some cases for the head of the faculty. University supervisors were asked to send those letters to interns and to companies they have connections with through internship. Some of university supervisors told that they do not want to participate in the survey because they have already done it for another survey. Researches also had to send many reminder messages. Altogether 1360 e-mails were sent.

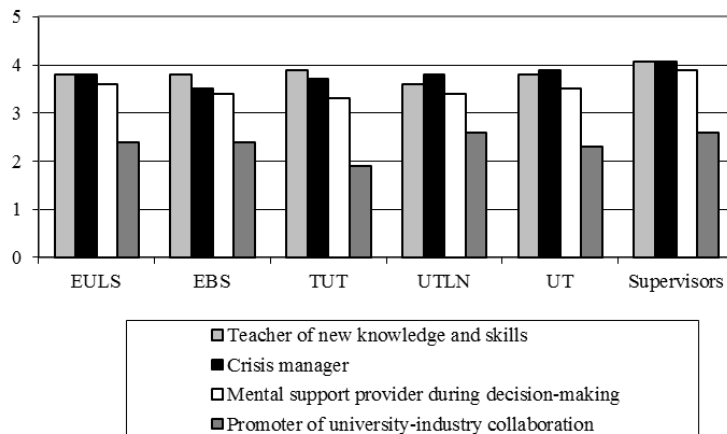
University supervisors were asked to share their contacts with companies to get in contact with the site supervisors. Through homepages and different hints, researchers also wrote to some random companies that offer internships. Prerequisite was that company have participated in internship process during last two years (2011-2013) because earlier thing are hard to remember.

Analysis of data was performed in SPSS 18.0 and in Microsoft Excel 2010. The analysis used the following statistical techniques: descriptive statistics, Spearman's nonparametric correlation analysis to identify whether, and what kind relationships are between the questions.

3. RESULTS

3.1. Roles of internship subjects

Research looked roles of all internship subjects (intern, site supervisor, and university supervisor) during internship. Based on the results we can say that site supervisors and interns see the role they carry similarly but critical point is university supervisor. First, you can see the roles of site supervisors (see Figure 4). Site supervisors found the most that they carry teachers' role (151 answers) which connected to the interns' wish to learn new things from internship experience.



Source: compiled by authors

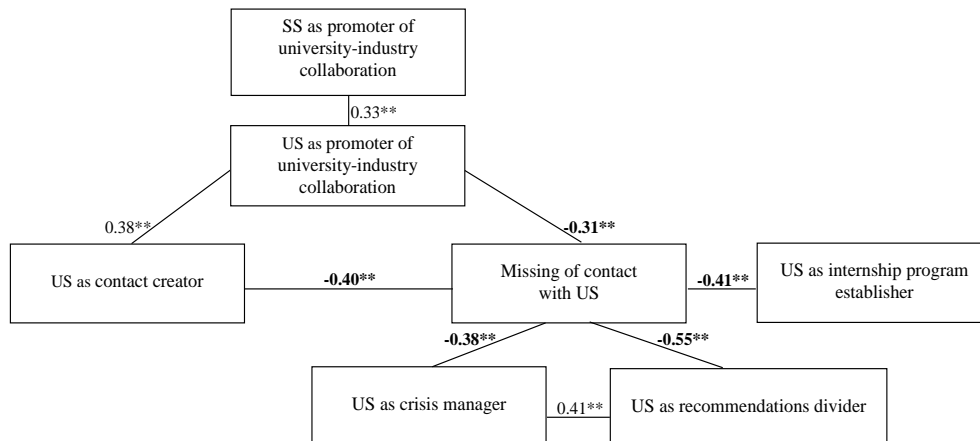
Figure no. 4 – Roles of site supervisors from interns and site supervisors' questionnaires (means over 2.5)

To look the size of the companies, then only those site supervisors who work in bigger companies answered that they were the teachers. Site supervisors from smaller companies answered that they carry the role of helper who evaluates the problem during internships. However, site supervisors thought about internship as important cooperation channel between universities and industries regardless one in five respondents answered that she/he did not contribute that role.

Interns' answers showed that they see the role of the site supervisor as helper to evaluate the problem. Interns also gave high ratings to the role as teacher of new knowledge and skills. Interns evaluated from different site supervisors' roles the lowest the role of the helper of university-industry collaboration.

Secondly were reviewed the roles of university supervisors where critical results came to the fore. Almost half (46%) of site supervisors answered that they have not had any contact with university supervisor. This was followed by site supervisors' role as internship program-establisher (30%) and contact creator in the beginning and in the end of the internship (24%). None of substantial cooperative roles (recommendation divider, helper to evaluate the problem, and promoter of university-industry collaboration) did not reveal in the same extent. Critical is that missing of contact (61%) also occurred during long time (more than two months) lasting internships. Missing of contact with site supervisor is negatively related to all of the other roles except the role of plan compiler. This result shows that university supervisors carry only the role of plan compilers.

Interns mentioned the most that university supervisors are recommendation dividers (39%) who help interns successfully finish the internship. Almost the same amount of interns mentioned that there was no contact with university supervisor (35%). In addition, they chose the role of internship program-establisher (29%). Similarly, to site supervisors' answers correlations showed that university supervisors carry program-establisher role if they carry any of the roles at all.



Note: US – university supervisor; SS – site supervisor; ** p<0.01

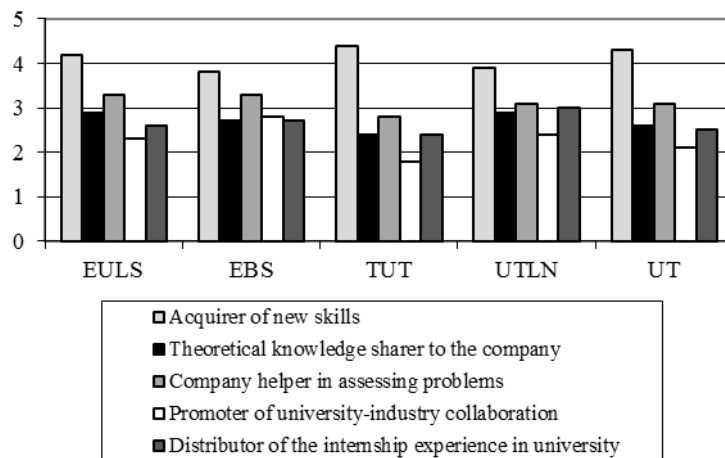
Source: compiled by authors

Figure no. 5 – Correlation tree (r>0.30) about the roles of university supervisor

Differently from site supervisors questioner appeared from interns' ones that missing of contact with interns is negatively related to internship program-establisher role (see

Figure 5). From those correlations, one could see that if there is no contact between university supervisors and students or site supervisor then they carry no role. Also cannot assume that they promote university-industry collaboration. Growing dissatisfaction with the university supervisor and faculty support shows that missing of contact is a problem and interns would like to see more the contribution from the university supervisors in internship process.

From open answers, become evident that interns had an opportunity to get advice and assistance from university supervisors, but in most cases there were no problems and help was not necessary. Thirdly was examined interns evaluation about the fulfilment of their own roles (see Figure 6) during internship.



Source: compiled by authors

Figure no. 6 – Roles of interns (means from interns' Questionnaire)

Interns evaluated themselves the highest in role of the acquirer of new skills and the lowest in role of promoter of the university-industry collaborator. EBS differed from other universities because their interns evaluated higher their role as company helper in assessing problems and promoter of university-industry collaboration. Interns from UTLN evaluated themselves higher in the distributor of the internship experience in university role.

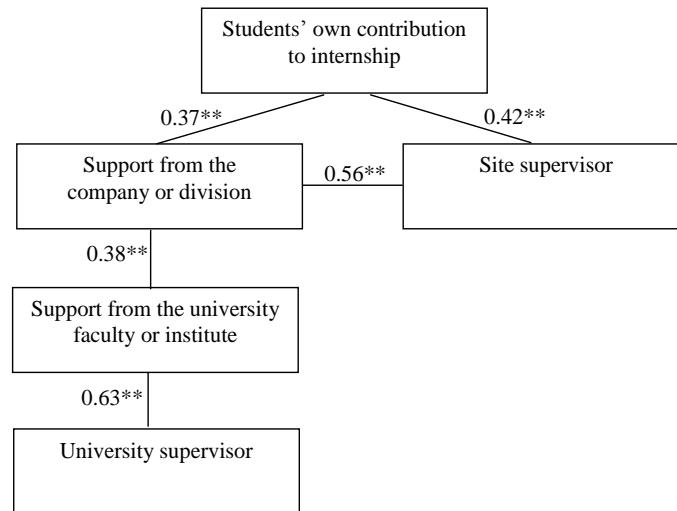
3.2. Satisfaction with internship

Good result was that site supervisors were very satisfied with interns (155 positive answers). Site supervisors also evaluated higher the support of their company (137 answers), but very few of them (70 answers) were satisfied with university supervisors. The results also shows that the bigger the company from where the site supervisor is, the lower the satisfaction with university supervisor. Satisfaction was higher for those who took part in internship report defence in universities and the lowest for those we were not informed about internship report defending time. Critical is that 40% of site supervisors answered that no one informed them about defence. This problem was especially likely to bigger companies.

From correlation analyses appeared acute problem that missing of contact with university supervisor has negative relation to all the other roles. Therefore, we can say that if university supervisor has no contact with company, she/he is not carrying any other role either.

Similarly to site supervisors also interns were satisfied with site supervisors, but unsatisfied with university supervisors. Most of the interns were also satisfied with their own contribution in internship program.

Interns evaluated the lowest satisfaction with the university department. Similar was also the dissatisfaction with university supervisor. Correlation analyses showed positive relations between all of satisfaction indicators (see Figure 7). Therefore, if the intern was satisfied with his/her own contribution, then she/he was also satisfied with site supervisor and university supervisor. Quite strong relation ($r=0.63$) was between faculty support and university supervisor.



Note: ** $p < 0.01$

Source: compiled by authors

Figure no. 7 – Correlation tree ($r > 0.30$) about satisfaction of different internship subjects

For example, the site supervisors who work in bigger companies find it very important to get feedback about their supervision and to connect with universities. Survey shows that there is lack of connection between university supervisors and other subjects. In addition, site supervisors and interns evaluate low the satisfaction with university supervisor.

3. DISCUSSION

Everything that occurred during internship reviewed through different roles that interns, site supervisors, and university supervisors carry through evaluation of satisfaction. Evaluation of those clearly defined roles is important because it helps to see if individual subjects (as interns, site supervisors and university supervisors) can make knowledge exchange possible. Knowledge exchange is one of the most important stages in knowledge management, but is considered to be laborious and time consuming to achieve effectively (Duan *et al.*, 2010). As Liyanage *et al.* (2009) noted, successful knowledge exchange means that exchange results in the receiving unit accumulating or assimilating new knowledge and from that will win intern, university, and company.

Interns and site supervisors both evaluated the role of site supervisor during internship. Study revealed that site supervisors and interns were satisfied with each other and evaluated the roles highly. Tovey (2001) also found that site supervisors evaluate themselves the highest in role as teacher of new knowledge and skills. Interns evaluated themselves the highest in role of new skills acquirer. From this bases can be told that site supervisors' and interns' roles and expectations to each other match. Therefore we can hope that student's-learning outcomes will be maximized because of coaching, careful monitoring, and sufficient thought regarding professional development (Ellis, 2000). Such practical experiences as meeting deadlines, managing projects, working in teams with others, and negotiating through the maze of conflicts and reviews in the workplace are quite different from those experiences we attempt to replicate in the classroom (Tovey, 2001). Therefore, it is important that site supervisors carry the role of teachers.

Interns and site supervisors both evaluated that site supervisors do not carry the role of promoter of university-industry collaboration even though they all evaluated this collaboration very important. It is critical finding because it shows that there is lack of co-work between university and site supervisor. Co-work between supervisors is important in order to raise the amount of co-work projects between universities and industries. Co-work between individual subjects is important to create knowledge exchange. The key words of communication flow are transparency, openness, constructive feedback and free access to information (Ahonen and Kaseorg, 2008). Lack of contact was also problem with internships that last more than two months. It is critical because from these kinds of internships feedback should be the highest to get information and case studies. Usually when students stay long in some company they will also start to work there. It is opportunity for universities to create long-term relationships with the company.

None of the meaningful roles of university supervisor (recommendation divider, problem solver, and promoter of university-industry collaboration) did not reveal in serious amount. From site supervisor and from intern's questionnaire came out that university supervisors do not carry any role during internship and there is lack of contact with them. They carry the most plan compiler's role that can be described as procedural role. In this role, university supervisors do not deal with knowledge exchange. This kind of problem can be specific to Estonian universities because there is no such occupation as university supervisor for the internship. Most of university supervisors carry this role alongside with their daily work (in some cases as professors). Therefore, it is understandable that they do not have time to deal with everything, but only with documentation.

University supervisor's co-work with interns and site supervisors is very important for three-sided exchange of knowledge. For example, the feedback is very important for smaller companies. Woods and Dennis (2009) have also found that in case of university-industry collaboration it is necessary to act differently with smaller and bigger companies. Smaller companies do co-work immediately when it is useful for them (free labour for example). For bigger companies is important to shape the image of the company and to get feedback. In Estonia, most of companies are smaller ones. In that case, it is necessary to give feedback to site supervisors and create links between university and company.

Research showed that satisfaction between site supervisors and students was high. Both of them were not satisfied with university supervisors. Dissatisfaction with university supervisors showed that students want more intervention from them. This is critical aspect if we want knowledge exchange to work. When comparing the results regarding the size of the company, one can notice that bigger companies were less satisfied. It might be so because

they wait long-term relationships, different projects, and good feedback. While student interns are trained in job skills and have learned how to negotiate the workplace environment, they can also bring new ideas into the workplace. Faculty members, who participate in faculty's internship, have the opportunity to learn about the jobs their students compete for, bring new concepts into the workplace, and do research (Bosley, 1995, Hart and Glick-Smith, 1994, as cited in Tovey, 2001; Hayhoe, 1998, as cited in Tovey, 2001). However, this partnership depends on educators, students, and workers listening to each other. Then intern can make a transition from student to professional. Company can get new ideas and in some cases a good future employee. University can get good cases and knowledge from practical work ground. In case of our research the lack of co-work comes through university supervisors and dissatisfaction with them.

4. CONCLUSIONS

The study gives an overview of the internship's current situation in Estonia. The study was limited because of the small number of participants. It was almost impossible to control whether university supervisors sent the participation request to companies or to site supervisors they are working with. Another limitation of this study is that the results are based on supervisor perceptions. It is quite possible that site supervisors would view the supervisors' approach or the supervisory working alliance differently. The results are critical towards university supervisors who did not participate in this survey and had no opportunity to share their vision. Interviews with the university supervisors were carried out during winter 2014.

The contribution of this study is an overview of the situation as much as recommendations for development in this field. Lack of university supervisor's role in internship process gives a hint that something needs to change if the goal is university and industry collaboration. Thus the study also invests in the policy making process and points out the fact that there is a need for full-time worker in the position of university supervisor.

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