Tampere University of Applied Sciences

Educational institutions as stakeholders and collaborators: perspectives of company leaders

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ABSTRACT

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Collaboration between companies and educational institutions is needed to tackle the challenges of future working life like declining younger age classes and growing shortage of the competent workforce. This study analyzes relationships between companies and educational institutions.

The research context of the study is in the wood industry which has presented a legitimate concern regarding the availability of a competent workforce in the future, and a university of applied sciences which, in the past ten years, has been the only educator of wood engineers in Finland. The theoretical framework is based on the literature of the stakeholder approach and value creation in relationship. Also, stakeholders and partnerships of educational institutions is reviewed. An empirical study with a qualitative research strategy consisted of interviews with the executives of four Finnish wood industry companies.

This study found that the relationship between a company and an educational institution is always based on competence. Good personal and organizational relationships are appreciated as well as systematic partnership meetings and goals, which are agreed together. Companies have an important message to educational institutions: unofficial meetings, visits on a reciprocal basis, and initiatives and openness are needed.

Leaders of companies understand and pay attention to value creation in stakeholder relationships. In the competence development of companies, educational institutions could have a more important role in ensuring the competent workforce (e.g. talent and career development paths, continuous learning, cultural competence of international students).

This study visualized three stakeholder maps and showed that traditional stakeholder thinking places educational institutions in the outer circle of companies' stakeholder map, and clients and strategic partners in the inner circle. However, educational institutions have an important role in companies' success and the concept of competence ecosystems between companies and educational institutions could be launched. Value is created in collaboration towards joint objectives. More research is needed on how to develop stakeholder relationships between companies and educational institutions in times of predictable and unpredictable challenges.

Key words: stakeholder, relationship, company, educational institution, value creation, wood industry

CONTENTS

1 INTRODUCTION

1.1. Purpose of the research

This Master's thesis work is part of my studies in the Educational Leadership program (Master of Business Administration) at the Tampere University of Applied Sciences. Master's theses of the universities of applied sciences (UAS) aim for the development of working life tasks. The purpose of the research is to develop the interaction and cooperation between companies and educational institutions. The need for the research was identified while working at a UAS in a leadership position as an active developer of collaboration and strategic partnerships with companies. The subject has been studied from a company leader's perspective to only a small extent if at all.

1.2. Context of the study

Joint efforts of companies and educational institutions are needed to tackle the challenges of future working life. One of those is to ensure qualified work force for the labor market when younger age classes are declining (e.g. Aro et al. 2020). The context of the study is the wood industry (mechanical forest industry) which is very important for the economy and export of Finland. The total turnover of the wood and furniture industry in Finland is about 8 billion euro of which the share of sawmill industry is almost 3, wood-based panels industry 2.5 and furniture industry approximately 1.2 billion euro. The number of employees in the sector is about 30,000 and the value of export is 3 billion euro (Federation of the Finnish Woodworking Industries 2021.)

The industry has presented a legitimate concern about the future availability of competent work force which is identified as a potential risk to business in the future (Puutuoteteollisuuden ja puurakentamisen kilpailukyvyn varmistaminen koulutuksen kehittämisen avulla 2019). Only one university of applied sciences educates wood engineers in Finland, which has been the situation in past ten years. The companies and the UAS share a joint interest to improve the

attractiveness of both the education of wood technology and the wood industry as a career option. Close collaboration and partnership aim to tackle the diminishing number of graduates (e.g. Kostia & Mikkonen 2019).

1.3. Research phenomenon

The research phenomenon of the thesis is the stakeholder status of educational institutions in company relationships (Figure 1). The stakeholder approach has been used especially in the corporate context in conceptualizing relationships between business and society and describing management of stakeholders (e.g. Mitchell, Agle & Wood 1997). The concept has changed over time from identification, categorizing and management of stakeholders towards leadership and value creation in relationships (Kujala, Lehtimäki & Freeman 2019). Collaboration between companies and educational institutions manifests in education and research activities in several ways whereas advisory boards enable collaboration at the organizational level (e.g. Kettunen 2015).

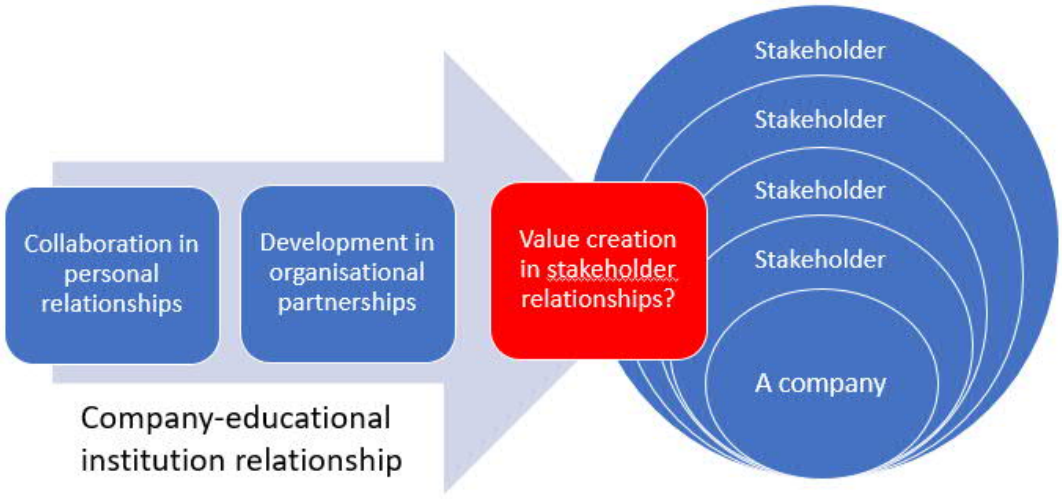

Figure 1. Overview of research phenomenon stakeholder status of educational institutions in company relationships.

1.4. Qalitative research strategy

This study analyses the stakeholder relationship of companies and educational institutions from the company point of view which was identified to be an interesting research gap. The empirical part uses a qualitative research strategy and thematic interviews as a research method. The content analysis of the research data uses abductive logic and the findings are reflected in existing theories and findings.

Four research questions are as follows:

1. Who are the main stakeholders of the company and why, and how have they been identified and classified?
    1a. How important are the educational institutions seen as stakeholders now and in the future in the company?
    1b. How are the stakeholder relationships maintained?
2. What actions does the company take to ensure the availability of a qualified workforce?

1.5. Structure of research and research process

The study consists of six chapters. The introduction section is followed by the theoretical framework (Chapter 2), which is based on scientific literature and other references and focus on the stakeholder approach of companies and stakeholder and partnership relationships between companies and educational institutions. The empirical part of the study is described in Chapter 3 including justification for the qualitative research strategy and thematic interviews as a research method. How the interviews are conducted, and the content analyzed is also explained. Results of the content analysis with the relevant quotations of the interviews are presented in Chapter 4 and are reflected in existing theories in the discussion part (Chapter 5). The main findings of the research as well as suggestions for the further studies and development ideas are presented in the conclusion section (Chapter 6).

Figure 2 presents the overview of the thesis process. The preliminary decision regarding the topic was reached in January 2018 when I was participating in the Academic research and practices course at the Tampere University of Applied Sciences and prepared the first draft of the research plan. In August 2019 I start planning the empirical research after reading the relevant literature. The interviews were conducted in December 2019 and the post-processing and analysis of them was done in the autumn 2020. The finalizing stage lasted from January to April 2021. In January 2020 I started a new job causing a delay of the research process, but also giving me a new perspective and a motivation to complete the work.

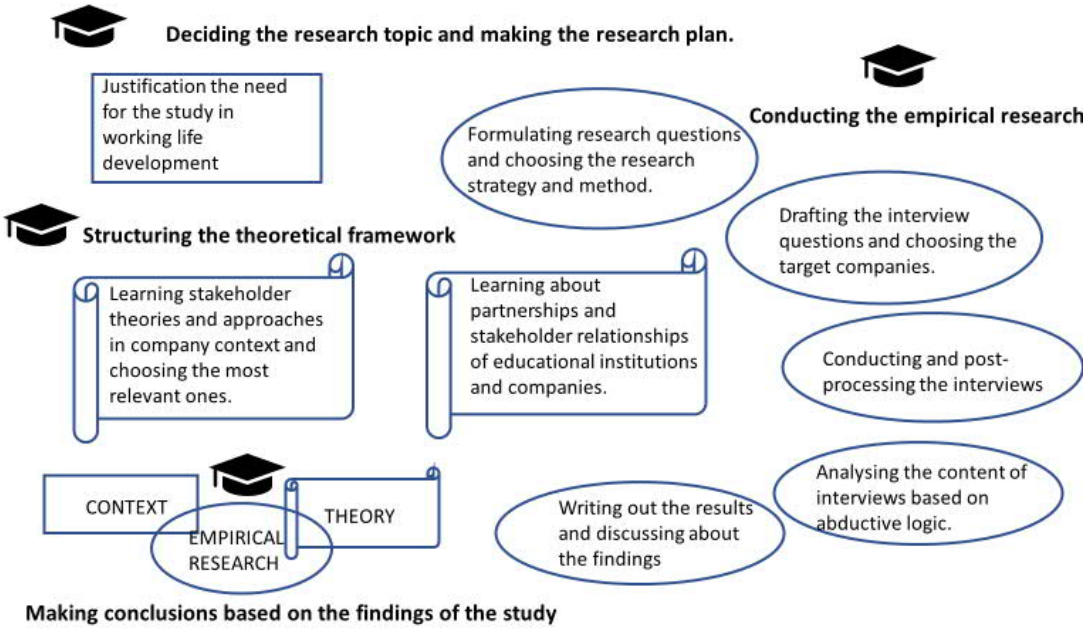

Figure 2. Overview of the thesis research process

2 THEORETICAL FRAMEWORK

This chapter gives a framework for the analysis of relationships between companies and educational institutions by reviewing existing literature. Stakeholder approach is described to provide a context for stakeholder maps of the companies. The text aims to give a perspective for how thinking has developed from management of stakeholders towards leadership and value creation. Elements and examples of collaboration between companies and educational institutions are presented with special focus on the Universities of Applied Sciences.

2.1. Four steps in evolution of stakeholder thinking

2.1.1 First stakeholder concepts

In this subchapter and the following ones, the evolution of stakeholder thinking is described shortly in four steps. The first one is grounded on the idea of Freeman (1984) about the levels of identification, evaluation, and development of stakeholder engagement (i.e. rational, process and transactional levels). To the same category fits stakeholder thinking of Donaldson and Preston (1995). In their model what is characteristic to the company is defined, the stakeholder management in relation to business of the company identified, and finally the function of the company deduced (i.e. descriptive, instrumental and normative approaches) (Donaldson & Preston 1995). Figure 3 presents an iconic picture by Freeman (1984) where several stakeholders for organizations are named but not ranked according to order of importance.

Figure 3. Stakeholder view of an organization adapted from Freeman (1984).

2.1.2 Stakeholder categories

In the next step stakeholders are organized in the order of importance. Clarkson (1995) divides stakeholders into two groups based on whether they are holding or not an official or formal relationship with the organization. Clients, suppliers, and employees represent the first group whereas the local community is an example of a stakeholders of the latter kind. According to Post, Preston, and Sachs (2002) stakeholders can be beneficiaries and/or risk bearers in relation to a firm. The model of three dimensions for stakeholders, the resource base, the industry base, and the socio-political arena, is presented in Figure 4.

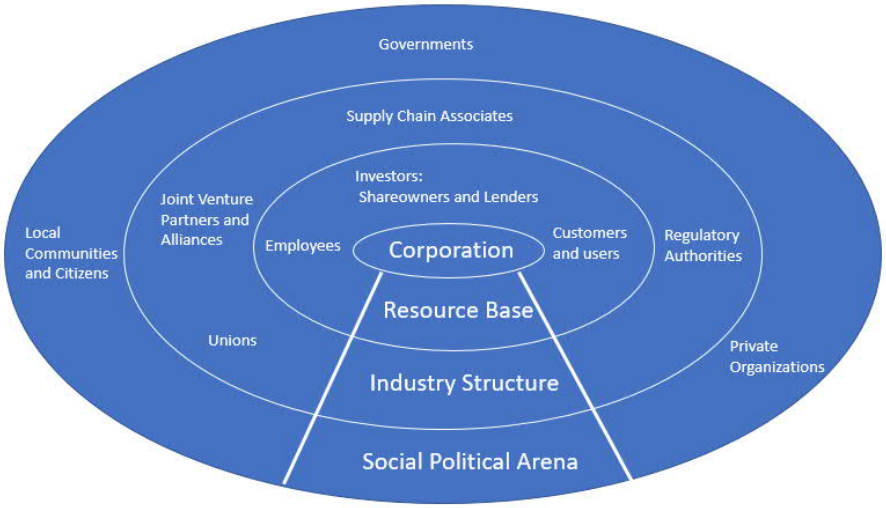

Figure 4. Three dimensions of stakeholders adapted from Post et al. (2002).

2.1.3 Stakeholder roles

The third step presents the stakeholder typology by Mitchell et al. (1997). The key of the model is the three attributes: 1. stakeholder's power to influence the firm, 2. the legitimacy of the stakeholder's relationship with the firm and 3. the urgency of the stakeholder's claim on the firm. The role of a specific stakeholder depends on the number of attributes it has (Mitchell et al. 1997) (Figure 5).

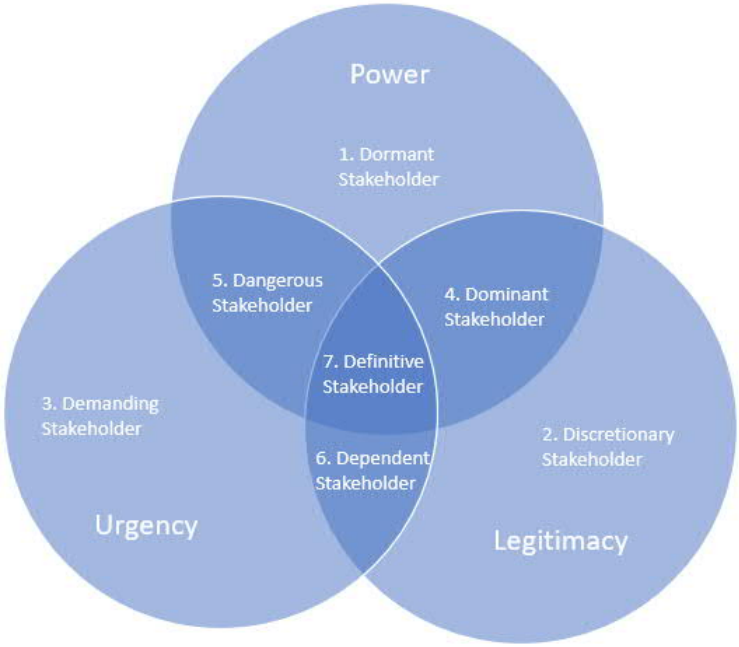

Figure 5. The stakeholder salience model adapted from Mitchell et a. (1997)

Jongbloed, Enders & Salerno (2008) have examined and developed further in higher education context the stakeholder model of Mitchell et al. (1997). They present latent, expectant, and definitive stakeholder classes based on the presence of one, two, or three attributes, respectively (Jongbloed et al. 2008). Gaining or losing of a particular attribute, can lead to change in the status of a particular stakeholder (Jongbloed et al. 2008). The empirical study of Mainarders et al. (2012) involving eleven public universities in Portugal resulted in a schematic representation of six kinds of relationships between the stakeholders and the university (Figure 6). Both Jongbloed et al. (2008) and Mainardes et al. (2012) recognized that instead of only classifying the importance of stakeholders, long-term relationships with the key stakeholders should be built.

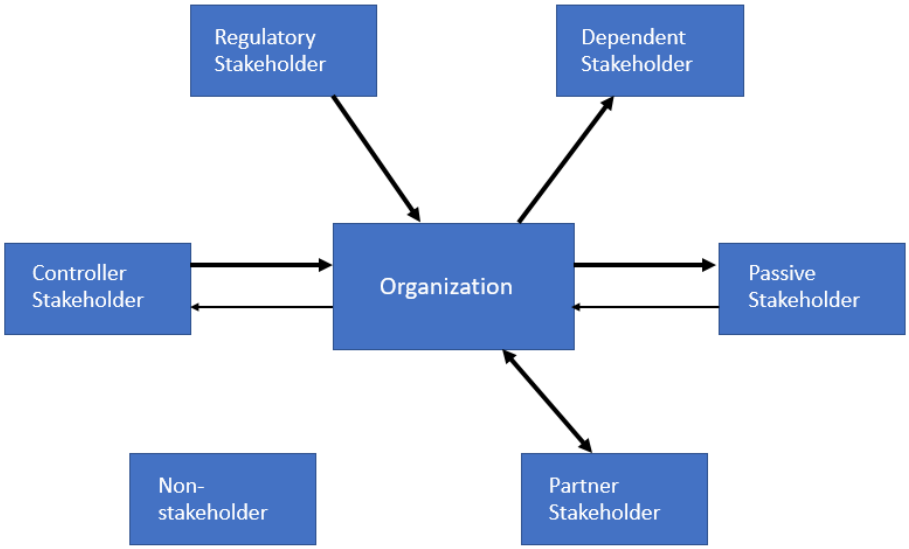

Figure 6. A schematic representation of stakeholder relationships adapted from Mainardes et al (2012).

2.1.4 Multistakeholder context and value creation

The fourth step consists of networks of diverse stakeholders and interactions between them. When interactions between different stakeholders of a particular company are included into a model it appears more complex than when only looking at the relationship between the individual stakeholder and the company. An advanced Stakeholder Value Network (SVN) model is an example of a dedicated mathematical tool developed for the context of large engineering projects (Feng 2013). Through alliances the company can be influenced directly or indirectly by a stakeholder (Frooman 1999) and cumulative total salience of allying stakeholders can make the message stronger (Neville & Menguc 2006). The synergy idea is based on the assumption that when a value is increased for some of the stakeholders it does not reduce the value already received by other essential stakeholders (Tantalo & Proiem 2017).

Recently Kujala et al. (2019) presented a stakeholder value creation (SVC) model which bring three attributes, ability to collaborate, joint interest, and trust, together (Figure 7). Ability to collaborate means that “an organization and its stakeholders see the opportunity to advance their own interest while also pursuing joint

interest". Joint interest are shared objectives and goals between collaborators, and trust is described to be "the oil in the wheels" of stakeholder relationships (Kujala et al. 2019).

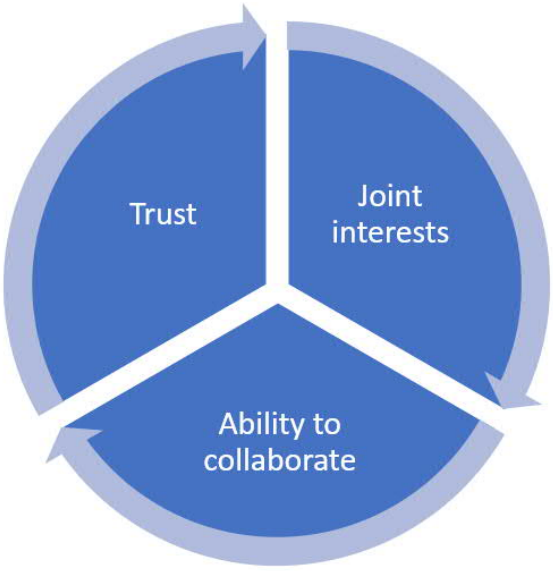

Figure 7. Stakeholder value creation (SVC) model adapted from Kujala et al. (2019).

2.2. Collaboration between companies and educational institutions

2.2.1 Motivation elements of companies

According to a recently published report based on the opinions of over 2000 respondents from companies all over Finland, important factors for collaboration with educational institutions are finding new talent and preparedness for future competence needs (about 60 % of those working together or interested in working together with educational institutions). In addition, the promotion of regional development and social responsibility, development and renewal of respondents or staff skills motivates companies to engage in collaboration. Among the respondents, 18 % collaborate actively, 38 % casually and 11% are interested in cooperation with educational institutions (Turja & Myllymäki 2021). Similar trends were recognized in a survey conducted in 2018 among members of Suomen

yrittäjät ry (Finnish Entrepreneurs' Association). More than half of the 265 respondents had collaborated with universities (including both universities and universities of applied sciences). In general, companies saw many opportunities in collaboration and those companies which collaborate actively, do it in many ways and with both universities and UASs. (Korkeakouluyhteistyö 2018).

Bigger companies dominate among those which cooperate with educational institutions, and they were also the most satisfied with the cooperation (e.g. the location of services, access to information, R&D cooperation). Smaller companies more often see that the development of business and competence and finding new talent is easier by using some other means than by collaboration with educational institutions. In general, the investment versus benefit of collaboration with educational institutions (input-output-ratio) was a topic which the companies raised to discussion (Turja & Myllymäki 2021). Frølund, Murray & Riedel (2018) examined the elements of successful university–company partnerships and presented a systematic approach of six questions and a canvas for how to prepare for engagement with universities. They suggested that companies should move from an *ad hoc* assignments to a strategic partnership approach with universities, and universities should learn to articulate their goals in clear business terms (Frølund et al 2018).

2.2.2 Motivation elements for educational institutions

There are several factors motivating educational institutions for establishing collaboration with companies. The collaboration manifests itself different ways in everyday life of which Table 1 gives an example from the Turku University of Applied Sciences, a Finnish higher education institution of approximately 10 000 students (TUAS 2021; Kettunen 2015). Universities of Applied Sciences in Finland were established to be higher education institutions providing education based on needs of working life. The Act specifies that the mission of UAS is education, research, development, and innovation activities (RDI) and regional development.

Table 1. Types of stakeholder relationships at TUAS in 2013 (Kettunen (2015).

Type of collaboration	**number**
Internships	2239
Theses	820
Project studies	544
R&D projects	766
Service to society	725
Memberships on advisory boards	217
Visiting lectureships	835
Other	766
Total	**6912**

The funding from the Ministry of Culture and Education has declined in recent years and higher education institutions have to apply for external RDI funding which usually requires collaboration with companies. Companies are members of advisory boards and participate in planning and development of the UAS depending on the status of the partnership. In addition, feedback is regularly collected from partners and customers as part of a quality assurance system (Kettunen 2015). Although in the stakeholder map of the Turku University of Applied Sciences, companies are located in the outer circle of the map (Figure 8), they are involved in several operations of the UAS (Table 1). However, a study by Kohtamäki (2012) recognized that the role of companies in the decision making process of the strategic focus area of education and RDI is not important in the Finnish universities of applied sciences. In the strategic focus area of education, the most influential external stakeholder group is the Ministry of culture and education followed by owners and “companies and other representatives of working life” group. In the strategic focus areas of RDI, the “companies and other representatives of working life” were the least influential group. The topic was examined using an electronic survey sent to middle and senior managers from big and medium size UASs (Kohtamäki 2012)

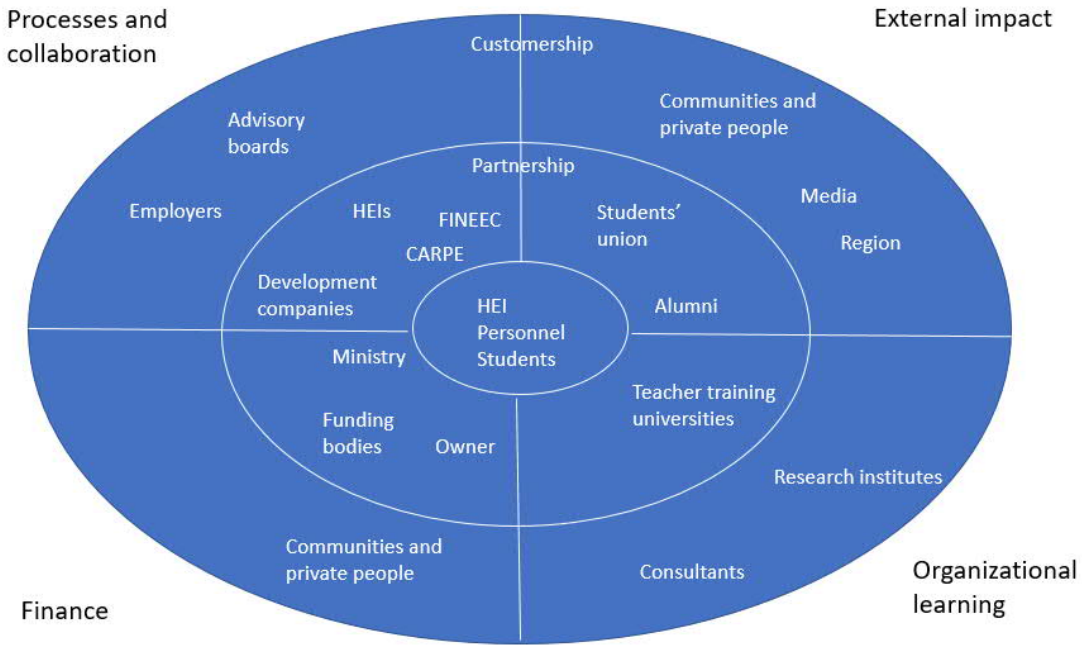

Figure 8. Stakeholder map of the Turku University of Applied Sciences adapted from Kettunen (2015).

2.2.3 Concepts of collaboration

Universities of Applied Sciences are important actors in regional innovation ecosystems based on their mission of regional development (Arene 2017). The Triple Helix Model is based on partnerships in a multistakeholder environment. It can be described as a knowledge infrastructure between state, academia, and industry in terms of overlapping institutional spheres (Etzkowitz & Leydesdorff 2000) (Figure 9).

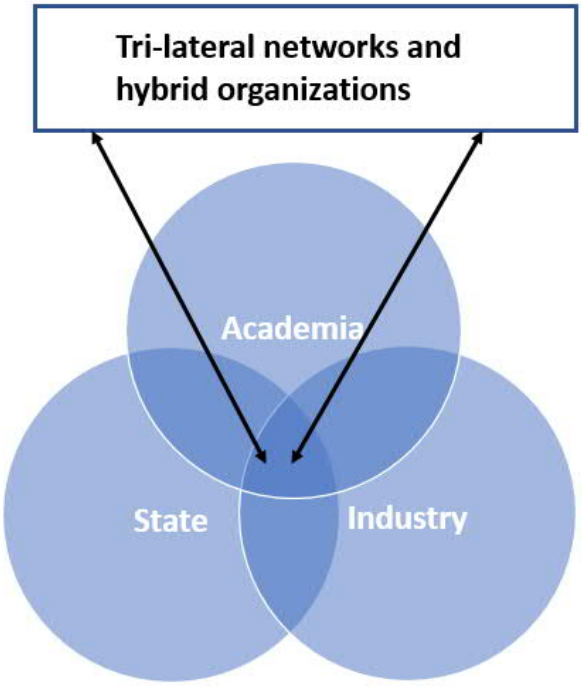

Figure 9. The Triple Helix Model of University–Industry–Government Relations adapted from Etzkowitz & Leydesdorff (2000).

The idea of the Triple Helix model has been realized in Finland in many regional innovation ecosystems aiming at promotion of research, development, and innovations as well as entrepreneurial activities in the region. Living labs are examples of multistakeholder networks aiming at cocreation of innovative solutions and connecting also international networks of different parties (e.g. Hirvikoski et al. 2020). The ecosystem concepts are tightly related to stakeholder thinking and tools for stakeholder analysis have been utilized when developing regional living labs (Imset, Haavardtun & Tannum 2018).

Cai & Etzkowitz (2020) point out that balanced interactions between the university, industry, and government hardly exist in reality. They give contemporary Silicon Valley as an example where a weak educational infrastructure is not able to support the need of talents of the industry (Scott et al. 2017). Mascarenhas, Marques & Ferreira (2020) have found that in Spain and Portugal governments could have a role as direct participants instead only as a financier although most of the regional networks based on Triple Helix knowledge co-creation operate with public funds. Analysis of success factors in nine Finnish

innovation ecosystems and environments revealed that coherence and the coordination of public and private action are one of the success factors of innovation ecosystems and environments (Laasonen et al. 2019).

3 EMPIRICAL STUDY

3.1. Qualitative research strategy

Four research questions (RQ) were as follows:

1. Who are the main stakeholders of the company and why, and how have they been identified and classified?
    1a. How important are the educational institutions seen as stakeholders now and in the future in the company?
    1b. How are the stakeholder relationships maintained?
2. What actions does the company take to ensure the availability of a qualified workforce?

This study applies a qualitative research strategy and thematic (semi-structured) interviews as a research method. The goal of qualitative research in this study is to understand the phenomenon. The data was interpreted using abductive logic. Abductive reasoning advances on the basis of expertise from studying the observed and identified phenomenon and from the material describing the features of the phenomenon and deriving reasoning towards theoretical models (Pitkäranta 2014).

A case study can be used as a generic term for qualitative research because a qualitative study is always a case. It fits well with the how and why questions (Yin 2014). It analyses an event or activity in a specific context and is based on empiric i.e. real-world observations collected in a number of different ways. (Pitkäranta 2014). The role of a researcher in a case study is to observe different variables and their relationships to understand the phenomenon (Dooley 2002; Dresch, Lacerda & Miguel 2015); Understanding about one case helps to understand the similar ones (Gerring 2004).

It was clear from the beginning that a survey or some other quantitative method does not serve the purpose to analyze the relationship between companies and educational institutions. Instead, a need for discussions was identified. In the

qualitative research process the researcher is part of the process and needs a significant amount of trust and social capital. What does it mean, become clear only when conducting the interviews (Pitkäranta 2014). According to Creswell (2008) “one-to-one interview is ideal for interviewing participants who are not hesitant to speak, are articulate, and who can share ideas comfortably.”

3.2. Conducting the interviews

3.2.1 Drafting the interview questions

Ten interview questions (IQ) were formulated. Five interview questions (IQ1-5) were related to RQ1, RQ1a and RQ1b:

IQ1. Who are the main stakeholders of the company and why, and how have they been defined and possibly prioritized?
IQ2. How do you maintain stakeholder relationships? (this question also for educational institutions unless the interviewee raises it himself/herself?)
IQ3. What will the stakeholder horizon look like 5 and/or 10 years from now?
IQ4. Which educational institutions are the main stakeholders at the moment and why?
IQ5. Do you see a change in the stakeholder position of educational institutions over a 5 and/or 10 year time span?

Three interview questions (IQ6-8) were related to RQ2:

IQ6. How do securing competencies show up in your strategy? What about in operational management?
IQ7. How challenging do you experience finding talent, and what kind of actions have proved best in recruitment?
IQ8. What kind of challenges and opportunities do you see in recruiting 5 and/or 10 years from now?

One question (IQ9) was about the Stakeholder Value Creation (SVR) model and the last one (IQ10) was an open question.

IQ9. How do you think the SVC model fits into your company's stakeholder thinking on the one hand and your view on the educational institutions as stakeholders on the other?
IQ10. What was left unasked?

3.2.2 Choice of interviewees

Four target companies were chosen because they were close collaborators in the joint project to promote wood technology as a career opportunity and as a choice of education. In two companies one interviewee participated and in two companies there were two interviewees (Table 2). All the interviewees were members of executive boards. Revenue and anumber of personnel in the companies is presented in table 2 and adapted from open internet sites providing the key economic indicators of companies.

Table 2. Code of the company, position of interviewees, the revenue and number of employees.

Code	Intervieews	Revenue category 2019 M€	Personnel category 2019
A	CEO	100-200	500-999
B	HR director and CEO	300-400	500-999
C	Director of a business unit and HR director	200-300	500-999
D	Marketing director	under 50	50-99

Target companies were first contacted by email consisting of a short motivation text and an attachment including the interview questions. Interviews were

conducted in December 2019 face-to-face (approximately an hour), recorded and transcribed. The interviewees were encouraged to think about all level of education when answering the questions related to educational institutions. The written document was sent to interviewees with a request to make corrections, comments or to add if something was missing. In one target company, an additional person was supplementing the previous interview.

3.3. Interviews and content analysis

After acceptance of the interviews by the interviewee, the Qualitative Content Analysis (QCA) was conducted with the methods presented by Kuckartz (2019). The interview quotes were organized in an excel table according to the interview questions (Table 3). Some quotes were interpreted to belonging to more than one interview questions. Abstraction of the original quotes by reducing was conducted. The reductions were (pre)categorized in two columns by describing 1. what they are? 2. why do they exist? (Table 3)

One of the three attributes of the SVC model (ability to collaborate, joint interest and trust) was tagged to every pre-categorized quotation. In addition, elements describing the attributes from the study by Kujala et al (2019) and references therein, was added to the table. Elements for attributes were as follows:

> Ability to collaborate: interest, interaction, sharing, participating, learning, developing, commitment
> Joint interest: goals, objectives, need, demands, investments
> Trust: engagement and resilience.

Table 3. Structure of the excel tool to (per)categorize interview data.

Interview question X	Abstraction by reduction	What they are?	Why do they exist?	Attribute of SVC model	Elements of attributes
Quotation X1					
Quotation X2					
etc.					

The (pre)categorized data from columns 1 and 2 were organized based on the main categories and the writing process of results started following the main categories. Quotations were translated from Finnish to English when results were written.

Research question 1. (IQ1-4)

The main stakeholders of the company and their status

Companies' needs for stakeholders

The stakeholder horizon of the company in 5-10 years

Research question 1a. (IQ4-5)

Educational institutions as stakeholder

Changes of role of educational institution as stakeholders in 5-10 years

What was left unasked?

Research question 1b (IQ2)

Ways to maintain stakeholder relationships

What was left unasked?

Research question 2 (IQ6-8)

Strategic and operational course of actions to ensure qualified work force

Identified challenges in recruiting and the best courses of action.

The challenges and possibilities recruiting in 5-10 years

SVC model for value creation in relationships (IQ9)

4 RESULTS

4.1. Stakeholder approach of the companies

This research recognized four different stakeholder stories with common themes and specific topics. The leaders have identified who the companies' stakeholders are and why as well as how important they are. Three different stakeholder maps based on the content of the interviews are presented in Figure 10 a., 10 b., and 10 c.

Starting from the inner circle of the map clients are the most important stakeholders in all the companies. Clients bring the revenue, but they can also be collaborators in joint development projects.

> *"From a business point of view, clients are the main stakeholders. They are the reason for the work. For the company clients are partners which are needed to do international business on such a broad market base. The company has about 300 clients, of which the top 40 bring most income"* (D)

> *"In tendering, we won a big international company to be our client, and immediately, development projects were launched to see how companies could benefit each other"* (A)

Strategic partners are also located in the inner circle of the stakeholder map. The key economic indicators are shared with them which is a prerequisite to be able to have strategic discussions and shared development aims.

> *"In 2011, the company had 700 suppliers. A decision was made to reduce the number and now there are 100 partners, 50 of which are strategic ones … for current business, the number of strategic partners is optimal but if new business appears in the future, the situation might change"* (A)

The wood industry is capital-intensive and very dependent on the raw material (wood). This means that forest owners i.e. producers and sellers of wood are very important stakeholders because the companies are dependent on their willingness to sell "*you can't just order logs*" (B). Also, subcontractors and resellers have an essential role in the value chain. Financiers and insurers guarantee the funding base and risk management and thus enable the operation of the company. Organizations providing RDI funding can have an important stakeholder role in development activities of the company.

Authorities, which give permissions to sell products on different markets and allow the construction of industry plants, are important stakeholders as well.

> *"For example, fire retardant regulations in Finland do not work in Hong Kong and product approvals that operate in Finland do not work in Sweden. This is a multidimensional frame of reference"* (A)

In the outer circle of companies' stakeholder map are service providers, authorities in municipalities and regions, residents around industry plants as well as associations and politicians which lobby issues important to industry. Educational institutions are located in the outer circle of the companies' stakeholder map as well (Figure 10 a., b. and c.).

The company has not placed their stakeholders in order of importance but instead the whole value chain is seen valuable including interactions between the different actors. However, there is division between the long- term and short-term issues.

> *"Work with interest groups and education often targets longer-term issues. If the division is done roughly so that in the core are those without which the company can't survive and on the outer circle those, without which company can survive some time.* "(B)

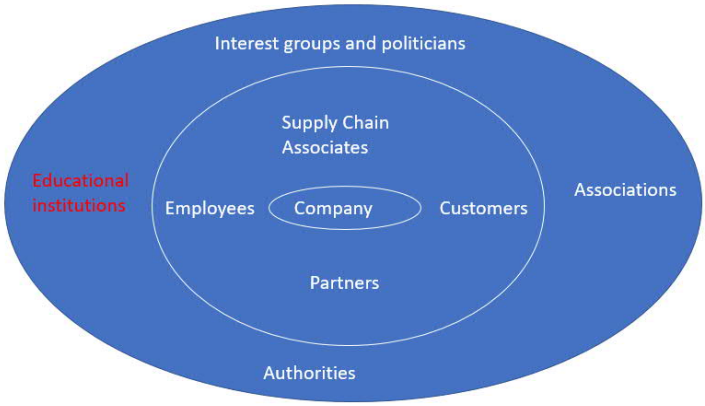

Figure 10 a. Stakeholder map 1.

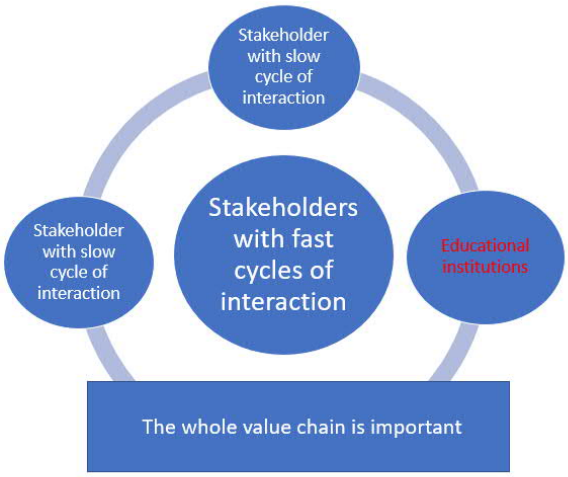

Figure 10 b. Stakeholder map 2.

Figure 10 c. Stakeholder map 3.

Alliances are built between companies to complement each other's business and competence, and they represent business in a multi stakeholder environment. Alliances of different kind are important both for business and for research and development collaboration between companies, universities, the universities of applied universities, and research institutes.

> *"The company is strict about not setting up alliances with those in the same industry. The Alliance includes the elements of trust because of lack of competition and a shared goal. One invoice is sent to the client, but the project is made together."* (A)

Megatrends, which may have an impact on the industry, can accordingly generate the need for new stakeholders. Growth of timber construction requires new expertise and experts. New operators in production of raw material related to carbon sequestration needs new collaborators to ensure access to raw material. Growth of the company and towards international business requires a broader and more international partnership network to support the growth. Identification "in house" and outsourced operations is important in the development of the company's operations.

> *"The company has grown very fast and partnerships have been stable, but the more the business grows and the more international the company becomes the more broadly it needs to think about the partnerships."* (D)

4.2. Stakeholder relationship of companies and educational institutions

Relationships between companies and educational institutions are based on competence. However, the location of an educational institution close to a company is a benefit and makes interaction easier in some cases. Partners are needed both in vocational and in higher education including UASs and universities. In case of major changes in the curriculum and thus the competence of graduates, a new collaborator has to be found. Good personal relationships, organizational partnerships and flexibility in collaboration are appreciated and

new, innovative openings expected. Organizational level management is required in educational institutions, and the relationship must not depend on one person although the value of personal relationships is recognized. However, the roles of the company and the educational institution has to be clear.

> *Stakeholder cooperation with educational institutions is not accurately defined but instead it is open. You can't write signs in the stone but instead be open to all the new ideas… In terms of educational cooperation, a local UAS is ideal because it is in the same building. Likewise, the units of a university are located in the same property and certainly there will be cooperation. Similarly, a local vocational school is easy to collaborate with.* (A)

> *"We collaborate with a UAS, which is developing a timber laboratory and with a university with timber construction competence. These represent RDI and competence in higher degrees of processing. Educational institutions have been selected as stakeholders on the basis of the need and social responsibility. A local UAS is the most important because it is the only educator of wood engineers and a great deal of cooperation with it ... perhaps never officially set, become more naturally."* (B)

> *The local UAS is very important and something is also done with a local vocational institute. Another vocational institute is very important because of providing a professional degree in the wood sector (apprenticeship) and having very good teachers …with a university partner the company should develop similar relationships because university graduates are also needed.* (C)

> *"Collaboration with educational institutions is based on competence, i.e. identifying kind of competence is needed and then wondering where to find it and then take action … on the other hand, whether the company can find something that it had not recognized itself, of which a good example was the product development course where*

> *wood engineers and designers produced new ideas for the company."* (D)

Companies could benefit the educational institutions as a direct recruitment channel, or on the other hand, could provide talent and career paths to students or personnel in partnership with educational institutions. Language skills and cultural knowledge of the international students should be more properly exploited increasing the engagement of the students in the company. Companies are ready to do their share. A start-up center to support student innovations is a good example. The company provides a property, subcontractor networks and help in the commercialization of the ideas. One company had made a strategic decision of investing in educational partnership to ensure resources to collaboration.

Company leaders brought up some future challenges to the educational institutions. Students should be more internationally oriented and they should have more marketing competencie. Low-carbon requirements and EU Green Deal promote timber construction and experts and expertise is needed for the whole value chain. Invitations to company people to give students up-to-date information about the career possibilities and current topics of the industry should be regular. Company presentations would give students possibilities to get excited about the industry and the companies, which is important for both parties. A need for broad and interdisciplinary competence in the future working life was mentioned. This subject needs contribution both from companies and educational institutions. Also, how well different job tasks are respected is a shared interest.

> *"Interdisciplinarity is good; sales, economics, design. An engineer needs to be able to express a product with words. For example, the model which combines wood technology and business studies has been a success. The level of manager work should also be raised by education. The company also plays a role in how, for example, manager work and all tasks are valued in general."* (C)

How to find the competence and networks of a university? Most of the relationships to international partner schools in educational institutions are via

personal contact which makes utilizations of international networks of universities difficult for companies.

> *“In the spring, the company had a timber architecture competition and the idea was that the university partner would have a good international network through which information would spread. However, it turned out that the network was not available, but instead the company was looking for the international partners itself. There should be a possibility to collaborate with international partnership network of the university but somehow the rigidity blocks that. A single teacher and professor may be able to use only their own partnership network”.* (D)

4.3. Maintaining stakeholder relationship

Maintaining and the development of the stakeholder relationships is an active and ongoing operation in the companies. Important elements of collaboration are flexible responsiveness to new situations, that cooperation evolves and exploits both sides, and that new openings emerge. The main issue is to enrich knowledge in stakeholder relationships. A considerably amount of time is used for interaction with stakeholders, and even a need for making the workload manageable was mentioned.

> *Collaboration with stakeholders is continuous and both parties have to think that they get something. The company has to get value for time and money and that the business develops.* (A)

> *There is no stakeholder strategy at the moment, but should the future of stakeholder work be somehow outlined?*
> *... annual planning cycle could help not to drown in the workload. Current systems allow continuous monitoring. It is possible to see what happened yesterday and to make plans and budgeting for the next month.”* (B)

The importance of stakeholders reflects the frequency and amount of communication in the companies. Constant interaction with important stakeholders is needed to ensure sales revenue and profitability of business.

> *Approximately 3000 timber trades are made per year (10-15 per day) case by case with the forest owners of which some are selling once every five years while big forest owners sell more frequently. This is a day-to-day activity and requires constant communication.* (B)

Development of the relationship with stakeholders in the outer circle of the stakeholder map prompted many comments especially regarding interaction and communication with educational institutions. In open comments ("what was left unasked"), it was a dominant topic. There is a need for informal meetings and regular visits instead of e-mails. Personal relationships make things easy and uncomplicated which is important to companies. Especially for small companies the collaboration should be as uncomplicated as possible.

> *"People in educational institutions should come out of their nest. They seem to be in a rush all the time, there should be time for free-form and informal meetings. Personal relationships are important to make things go forward. More uncomplicated communication is needed, not email letters".* (A)

> *"The professor visited companies all the time and the needs of the companies were well-known. For example, thesis subjects often are better recognized by educational institutions this way rather than inquiries via email".* (C)

> *"Educational institutions should make cooperation easy, especially for small businesses instead of too much stiffness.* (D)

> *"UAS should also advertise better their RDI competence. RDI supports education in a good way"* (C)

> *“There was a good discussion in the product development course. Students do not yet have a view on product development, for example, and therefore it is important to have a discussion with representatives of the company.”* (D)

However, formal interaction is appreciated and the regular annual meetings where the tasks and objectives are recorded makes collaboration systematic. Courses where companies have an important role are opportunities for them to have new ideas, to provide a positive employer picture and to find competent people. For students and teachers, the collaboration gives a view to the industry.

> *For example, regular annual meetings with a UAS with strategic partnership agreement is complemented contact on a case-by-case basis, e.g. in connection with various projects and when meeting in other context, e.g. at the meetings of associations.* (C)

> *Educational institutions should ask companies to talk to students more often. The company is a technology leader and the largest producer and therefore also plays a role in distributing the joyful message, from which the industry as a whole and the smaller companies will benefit.* (D)

Generally, companies have added communication with stakeholders in recent years because it has been seen to be important for business. Participation in the national working groups and preparation of development programs as well as interaction with politicians and authorities is important advocacy work. Events like "Partnership days" or "Open doors" or "Stakeholder event" and webpages of the company communicates to wider audience. Interaction with the local community of an industry plant is also essential to avoid conflicts.

> *The company operates in many locations and contact with stakeholders also varies depending on it. If the operation is in the middle of the city, with the city center coming closer all the time, there is much more interaction with the community than with small*

localities where the activity is predominantly in the industrial environment. (B)

4.4. Ensuring competent workforce

Important elements to ensure a sufficient number of competent applicants in the recruitment process are a good reputation and a credible story of the company. Applicants make choices based on their values and the values of the company should conform to those. Career opportunities which the company provides are important as well. However, mechanical forest industry has challenges related to the image of the industry. The message that there are plenty of variable and modern work tasks in mechanical forest industry should be better communicated to young people.

The number one question is what kind of reputation the company has. Regardless of what the market situation is like, companies having a good reputation get people. If the company is considered reliable and the story is credible and it is communicated that you are applying to do something valuable, you will also get people in the remote localities. (A)

“To make industry more attractive among young people it is important to tell that it is "valuable work". The negative image of the industry may be a barrier to apply for a study place or work. The heaviness of work, the admiration of higher education, the low appreciation of vocational training, the shortage of training places makes it difficult to find people for production and maintenance, and this could be an obstacle to the operation of the company in the future”. (B)

Companies use different recruitment methods depending on whether the recruitment of directors, middle managers or production line workers is in question. In the small localities of companies where everyone knows each other, the factory and the work, “the bush telegraph" is an effective recruitment channel.

If business and thus competence requirements change, recruitment practices have to be updated. Career changers are recognized as a new potential group for industrial recruitment. More cooperation between different actors in the society is needed to ensure that there is enough work force in the industry. It should be more beneficial to accept work instead of social benefits.

> *So far, the company has found competent staff but some signals have appeared. There will be difficulties in finding employees to the production line in the future. Directors are hired by headhunting which is kind of a symptom. Potential, in-house candidates should exist when an executive position opens.* (C)

> *"In the future, people will be recruited closer to the market, making good networks valuable. Now they are international trade interns. Previously, the company was selling bulk, i.e. terrace planks, but business is changing towards design products, project business and architecture. This means new competence needs for the personnel. This is a big unwritten theme"*. (D)

Competence development of personnel is manifested in the companies in several ways. Anticipation of competence needs in the future aims to ensure competitiveness. Qualified managers are ensured by training provided by the company. The mapping of competence of existing personnel is important as well as encouragement towards continuous learning and career development. Talent tools and a mentoring programs aim to grow executive team potential from internally identified talents.

> *"If employees with a degree in engineering are now in the production line they may be offered more challenging work tasks. On the other hand employees are encouraged to apply for studies. The company recruits people with potential to production and then encourage them to study further"*. (B)

A systematically organized development path would engage students as early as possible to the company. Providing placements for practical training and thesis

work gives the company an opportunity to learn to know a student better and to evaluate if there is potential for recruitment. Remote factory localities have difficulties in getting students for practical training and work, which is a challenge for companies. Confidential collaboration with educational institutions can also be a recruitment channel for direct recruitments. Apprenticeship as a form of education engages the student in the company and could bring the student, educational institution and the teacher closer to the stakeholder inner circle.

> *"Thesis projects and practical trainings are going on all the time to get to know the talent and potential to be recruited. It is an excellent way of identifying suitable individuals for the company".* (C)

> *"The position of the educational institution can also be closer to the inner circle, of which e.g. apprenticeship is an example, in which case the education provider is closer to the company than the traditional model. It would be better for the educational institutions, especially for the teachers in the future to be more in the inner circle of the stakeholder map."* (C)

4.5. The attributes of stakeholder creation model

A summary of quotations tagged to the attributes of the SVC model and organized according to research questions is presented in table 4a.-d. A synthesis of quotations presented in table 4a.-d. is given in Table 5. The elements that best described the attribute in question are also shown in the table (see 3.4. and Kujala et al. 2019).

Table 4a Quotations for RQ1 tagged by attributes of SVC model.

Attributes	Quotations
Ability to collaborate	all partners not directly related to core business, educational institutions, associations, interest groups, authorities, politicians, RDI funding bodies, RDI collaborators, neighborhood of industry plants, new operators in production of raw material
Joint interest	alliances, partners, local educational institutions, financial and insurance bodies, trusteeship organisations, personnel, contractors and suppliers
Trust	clients/partners, strategic partners, whole value chain (forest owners, personnel, clients, support services, logistics of logs and sawmill products, side products …)

Table 4b. Quotations for RQ1a tagged by attributes of SVC model.

Attributes	Quotations
Ability to collaborate	discussion about the education in the future, need for the whole value chain of educational institutions for company and future challenges (timber construction, EU Green Deal, demands for low carbon solutions)
Joint interest	initiatives with local educational institutions, partnerships in RDI and education, collaboration based on competence, communication about placements, thesis subjects and career possibilities in industry
Trust	to personal relationships in partner schools, local UAS educating wood engineers, vocational institute educating personnel in production line

Table 4c. Quotations for RQ1b tagged by attributes of SVC model.

Attributes	Quotations
Ability to collaborate	ability to react and to enrich the relationship, communication (further from core business) when needed/in unregular basis (service providers, politicians, and other policymakers), open stakeholder events, interaction with neighbors of industrial plant
Joint interest	added value of collaboration in relationship, partnership and regular meetings with local UAS, participation in the preparation of the national operational programs, active role of a company in course implementation
Trust	interaction in regular basis operators close to core business, strategic discussions with core partners, interaction with forest owners and clients

Table 4d. Quotations for RQ2 tagged by attributes of SVC model.

Attributes	Quotations
Ability to collaborate	importance of reputation and story of the company, communication about career possibilities and valuable work in industry, collaboration of different actors in society to ensure workforce to industry, availability of different recruitment channels, need for new recruitment practices when business grows and changes
Joint interest	initiatives with educational institutions to promote career paths of students, study possibilities for personnel together with educational partners, practical training placements and thesis subjects, systematic approach to evaluation of potentials among trainers, importance of shared values of company and applicant

Trust	present networks of the company working well in recruitment, personal relationships with university partner enabling direct recruitments, competence management and career possibilities for personnel, talent tool and mentoring program of organization

Table 5. The attributes of SVC model and synthesis on quotations presented in Table 4a.-d. Elements, which best described the attributes are also included.

Attributes and elements	Synthesis of quotations
ABILITY TO COLLABORATE; sharing, participation	collaboration with stakeholders in outer circle, interactions in unregular basis, open communication, participation in policy discussion
JOINT INTEREST; goals, objectives	competence based collaboration, partnership interaction in regular basis, joint initiatives and alliances, communication about career opportunities
TRUST; engagement, resilience	collaboration with clients, strategic partners and the value chain, continous interaction, personal relationships, competence development of personnel

To summarize the comments about the SVC model itself, the topics of trust and building the trust dominated. Trust is built in personal relationships and by working and doing together. Cooperation should bring added value to all co-partners.

> *"Trust is the number one issue, the fluency of communication, capability, easiness, speed. Cooperation must enrich and generate innovations and energy instead of being mind-numbing".* (A)

> *Low hierarchy in anorganization means that all links are important. Doing together is important. All these attributes are needed, trust in people and in the organization is the most important. Personal*

relationships are really important, as trust comes by working together with people. (B)

The model is a good partnership model but does not work at the moment. System vendors, for example, are among those where the model may not work because everyone thinks about their own plot. With subcontractors the situation is partly the same. Also, the model does not always work with educational institutions: a student was doing a professional degree in marketing in the company — teacher visited once during the eight months, i.e., to conduct an evaluation on the last day. (C)

You can't talk about a stakeholder partnership without things being done together (you can't just be buying and selling). The situation is the same with raw material suppliers if you want to get the best quality. (D)

5 DISCUSSION

According to a recent study, the trends influencing the development of the business the most are the emphasis on the relevance of work, the growing importance of networking activities, the growing shortage of the competent workforce, and the digitalization and automation of work and business activities. In the biggest companies, trends are more often said to affect business development than in the smallest companies. Smaller companies more often see that finding new talent is easier in some other way than via collaboration with educational institutions whereas bigger companies are satisfied with the collaboration (Turja & Myllymäki 2021). In Finland between the years 2001 and 2017 135 000 jobs were created in small and medium size (SME) companies. In the same period, less than 3000 jobs were reduced from companies of 500-999 employees and more than 37 000 from companies having more than 1000 employees (SME Barometer 2019).

Considering the trends influencing the development of the business and working life and findings about the collaboration of companies and educational institutions (Turja & Myllymäki 2021) and the fact that the younger age classes are declining (e.g. Aro et al. 2020) makes the findings of this study particularly interesting and timely. The relationship between companies and educational institutions are discussed first including the leading idea about the role of educational institution in ensuring the competent workforce for the companies. After that the stakeholder maps of the companies, and how educational institutions are placed in them, as well as the value creation in stakeholder relationship is discussed.

5.1. Collaboration of companies and educational institutions in ensuring qualified workforce

This research showed that company leaders appreciate good personal and organizational relationships, and value regular interaction to ensure the flow of information. They see the value of partnership with educational institutions in

ensuring a competent workforce. Educational institutions have a role as a partner in talent and career development paths, as a provider of continuous learning, and as an agent of cultural competence provided by international students, in joint development projects, and in communication about future competence. The findings were in accordance with the by Turja & Myllymäki (2021) focusing on the important factors for collaboration between companies and educational institutions: finding new talent, preparedness for future competence needs, the promotion of regional development and social responsibility.

The company leaders are ready to invest both time and money in collaboration, but co-operation must enrich and generate something new, i.e. bring value for the investment. Joint initiatives like courses planned and operated together are very welcomed by companies because good personal relationships and mutual trust are built by doing and developing together. Ability to collaborate is needed for joint communication about valuable jobs that the wood industry provide. The research recognized that the leaders see strategic partnership and annual meetings, including goal setting for the next year, valuable and brought up the benefit of a contact person in the relationship. Commitment of management of educational institutions to ensure the continuity of partnerships is valued. These findings were in accordance with Frølund et al. (2018) presenting a canvas and a bundle of questions to help companies to conceptualize the partnership with universities and move from *ad hoc* assignments to a strategic approach.

Challenges were recognized especially in utilization of international networks of educational institutions which was also mentioned by Turja & Myllymäki (2021) and stiffness in communication and collaboration. Other studies have also suggested that educational institutions should develop solutions for how companies, and especially the small ones, would not be lost in the jungle of administrative units and subcultures but instead make possible the access to competence and networks of the educational organization (Frølund et al. 2018, also Korkeakouluyhteistyö 2018).

5.2. Companies' stakeholder maps and value creation

This research visualized three different stakeholder maps based on the narratives of wood industry company leaders (Figure 10 a.-c.). The stakeholders have been identified and described, relationships evaluated and if needed, will be developed, which is in accordance with the engagement levels presented by Freeman (1984) and the approaches of Donaldson & Preston (1995).

Stakeholder map 1 place stakeholder groups in the order of importance (Figure 10 a). Different stakeholders have different roles and responsibilities and the direction of interaction is related to the importance of corporate stakeholders to the core business. Stakeholder map 1 resembles the one presented by Post et al (2002) consisting of layers named resource base, industry structure, and social political arena (Figure 4). Stakeholder map 2 (Figure 10b) is based on the idea that the whole value chain is important, and the division is according to frequency of interaction and type of operations with stakeholders. Clarkson's (1995) division of stakeholders into primary with official contractual relationships with the company and those not holding formal contracts resembles stakeholder map 2. Stakeholder map 3 is based on talk which included elements of multidimensional interaction of different actors in the stakeholder environment (Figure 10 c).

Company leaders placed educational institutions in the outer circle of the stakeholder maps. The location of a company in the stakeholder map of an educational institution is related to the role of the company in decision-making, strategic development and either directly and/or indirectly in financing (e.g. Kettunen 2015, Kohtamäki 2012). The education policy of the country has an effect on how the companies are located in the stakeholder map as well (e.g. Mainarders et al. 2012). However, educational institutions should build and manage the relationship with each respective stakeholder based on understanding their demands and needs instead of on the classification of stakeholders' importance (e.g. Mainarders et al. 2012, Jongbloed et al. 2008)

This research showed that how stakeholder relationships are maintained is related to their importance to the core business. However, leaders of the companies understand value creation in stakeholder relationships. Instead of

only selling products or services to clients they are seen as partners with joint interests. The key economic indicators are shared with strategic partners, and alliances are established for a common goal. This is in accordance with the message of the Kujala et al (2019) study, that instead of seeking to define what is valuable to whom, leadership should focus on understanding value-creating in stakeholder relationships.

All the attributes of the SVC model are needed for a successful relationship both in the inner and the outer cycle of the stakeholder map. Ability to collaborate is sharing, participation, and open communication, whereas joint interest means that goals and objectives are set together. Trust is built upon when doing things together, leading to increased engagement by all parties (see Table 5).

6 CONCLUSIONS

The wood industry gave an interesting and important context for this research. The joint interest with an UAS to improve the attractiveness of both the education of wood technology and the wood industry as a career option has intensified the cooperation in recent years (e.g. Kostia & Mikkonen 2019). The chosen research strategy and the content of thematic interviews made it possible to understand the research phenomenon of the thesis (Figure 1) and to answer the research questions.

The first research question was about identification main stakeholders of the company as well as their status. This research recognized three types of stakeholder maps where the clients and the closest partners are in the inner and educational institutions in the outer circle (see Figure 10 a.-c.). A theory base for stakeholder maps is found in the theoretical framework (e.g. Post et al. 2002; Clarkson 1995). Company leaders see that value is created in collaboration towards joint objectives in partnerships, in alliances, and in value chains. Companies are not only working for stakeholders but with them (e.g. Freeman et al. 2010; Kujala et al. 2019) and an added value for one stakeholder is not a loss from another one (e.g. Tantalo & Proiem 2017).

The second question was to consider the importance of educational institutions as stakeholders now and in the future. The company leaders value well-working relationships with educational institutions, but the roles of both parties have to be clear. The research recognized a potential role for educational institutions as a partner in creating talent and career development paths in the companies, as a provider of continuous learning, and as an agent of cultural competence provided by international students. The findings were in accordance with motivation elements of companies for collaboration with educational institutions found by Turja & Myllymäki (2021).

For the question about how companies are maintaining the stakeholder relationships, the answer is that the frequency and the way in which the company interacts with the stakeholder is related to the importance to core

business. The company leaders appreciate regular partnership meetings with educational institutions in combination with clear goal settings and management level commitment ensuring the continuity of relationships. These findings fit nicely with findings by Frølund et al. (2018) about successful company-university partnerships. The company leaders send an important message to the educational institutions: to ensure the flow of information in a reciprocal manner, regular visits and other opportunities for unofficial, uncomplicated communication are needed. This is in accordance with Kettunen's (2015) results about availability of resources for those who are responsible for industry collaboration.

The last question was about the actions the company takes to ensure the availability of qualified workforce. The research showed that companies have recognized that the growing shortage of a competent workforce is one of the leading trend in business development (Turja & Myllymäki 2021) and that they have taken actions to overcome this challenge. For companies, finding new talent and preparedness for future competence needs are important drivers for collaboration with educational institutions (Turja & Myllymäki 2021) confirming the findings of this study.

Stakeholder thinking in educational institutions is younger than in companies although collaboration manifests itself in many ways in everyday life (e.g. Kettunen 2015). To further study this topic, the thoughts of both management and personnel of educational institutions would be interesting to hear. Do experts see stakeholder interaction as an opportunity for professional collaboration and development? Does the management of educational institutions realize the importance of stakeholder relationships as a success factor? Is there a need for competence development in educational institutions in maintaining and developing stakeholder relationships?

In addition to innovation ecosystems promoting innovations and entrepreneurial actions (e.g. Hirvikoski et al. 2020), the concept of competence ecosystems between small and big companies and educational institutions could be launched. This could give smaller companies better opportunities for collaboration with educational institutions. Assuming that stakeholder thinking in

companies is developing towards the stakeholder value creation (SVC) model (Kujala et al. 2019) as this research indicates, educational institutions will be important collaborators in multidimensional stakeholder environments in the future.

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