

Exploring principal-agent theory in higher education research

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Suggested citation: Yallem, A., Juusola, H., Ahmad, I., Törmälä, S. (2018). Exploring principal-agent theory in higher education research. *Working Papers in Higher Education Studies*, Volume 3, 78-98.

The article is available online at: <http://www.wphes-journal.eu/>

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In this paper, we explore principal-agent theory and its' application in higher education research by conducting Fink's (2010) systematic literature review module. Data of this review consist of 14 articles from scientific journals in higher education research published between 2005 and 2016. After a systematic selection of the articles, descriptive synthesis is made. The findings of this review indicate that the principal-agent theory has been mainly used for topics related to system policy or institutional management. On the other hand, the theory was not applied to topics related to course design, student experiences or academic work. The analysis also indicates that principal-agent theory has not been widely used in higher education studies. This, as some of the researchers pointed out, might be due to the complexity of principal-agent relations in higher education institutions, besides behavior-based and outcome-based agency relations seem to be difficult to implement in higher education institutions.

Key words: principal-agent theory, agency theory, principal-agent model, agency problem, and higher education.

Introduction

Principal-agent theory (also known as agency theory or principal agency theory) is an analytical framework used for analysing the contractual relationship between two parties. These parties can be individuals, groups, or organizations. Three important conditions must exist before this model can be applied. Firstly, one of the parties must be “the principal” while the other party must be “the agent”. Secondly, there must exist an occasional conflict between the goals of principal and the goals of an agent. Thirdly, there is a possibility for information asymmetry between principal and agent. Information asymmetry refers to the situation where the principal cannot fully know about the actions or capabilities of the agent. If there is no potential of conflict of interest, then information asymmetry would be irrelevant and principal need not be worried about anything because an agent can act according to the interest of the principal. On the other hand, if there is

no information asymmetry and the principal knows everything about the actions and capabilities of the agent, then potential goal conflict does not matter, as principal can easily ensure that agent is acting according to the principal's wishes. (Waterman, 1998; Kivistö, 2005; Kivistö, 2008)

The principal-agent theory has been applied widely in different disciplines such as economics, accounting, marketing, political science, public administration and psychology (Kivistö, 2005). In higher education research, the principal-agent theory is applied especially for exploring governments' relationship with higher education institutions (Kivistö, 2005; Raudla Karol et al. 2015; Lane, 2015). The theory was also used but for explaining quality assurance in transnational education (see e.g. Blackmur, 2008).

According to Kivistö (2005), two important categories of agency problem may exist. Firstly, selection of the agent can lead to adverse selection problem, which arises before the principal and agent enter into a contract. If the principal knows exactly the tasks which the agent is supposed to perform, then the principal can identify the skills and motivations required to perform those tasks by the agent. However, due to information asymmetry and the private information possessed by the agent, the principal can select wrongly the agent on the basis of his claimed skills, capabilities and motivations. This wrong selection can thus affect the performance of the contract. The signaling and screening processes can overcome this problem. In signaling, agent reveals his private information to help the principal in the selection process. While in the screening process, the principal takes the initiative to carefully scrutinize the information about the agent. (Kivistö, 2005)

Secondly, the problem can arise when the principal and the agent have entered into a contract and principal cannot monitor the actions of the agent. If the principal tries to observe the actions of the agent, he will have to bear a huge cost for it, or the observation might be prone to error (Kivistö, 2005). This can lead to the moral hazard that refers the unbalanced risk-taking situations (see e.g. Holmström, 1979). The problem of moral hazard can be solved through two different methods. The principal can either enter into a behavior-based contract or the principal can enter into an outcome-based contract. In the first method, the principal will monitor the performance of the agent through different mechanisms, such as budgeting, reporting, and having a board of directors. But these

monitoring tools are sometimes very costly and cumbersome. In the second case, the principal can agree with the agent on certain outcome parameters. This type of contract helps to align the interests of principal and agent (Kivistö, 2005).

There are five important variables, which the principal should consider for choosing the behavior-based or outcome-based contract with the agent. The principal will select these variables on the basis of the cost to monitor the behavior of the agent or the cost to measure the desired outcomes of agent's actions. The first variable is the outcome measurability; whether or not outcomes are easily observed and measured. If outcomes are measured precisely and at lower cost, then outcome-based contracts are suitable. The second variable is outcome uncertainty; whether the outcome is mainly based on actions of the agent or on the external environment. If outcomes are uncertain, then behavior-based contracts are more suitable. The third variable is the task programmability; whether or not the desired behavior of the agent can be exactly specified or not. If the behavior can be specified then behavior-based contracts can be suitable. The fourth variable is the goal conflict. If the chances of goal conflict between the principal and the agent are high then outcome-based contracts are more feasible. The fifth variable is the nature of the agency relationship. In a long-term relationship, a behavior-based contract will be feasible, for in a long-term contract principal will be able to learn about agent's behavior. However, in the short-term contract when the principal will not get enough time to observe the behavior of the agent, an outcome-based contract will be more appropriate (Kivistö, 2005).

Purpose of this literature review is to find out strengths and weaknesses of principal-agent theory applications in higher education research. Our preliminary assumption is that principal-agent theory can offer a relevant approach for understanding the government-university relationship, especially in terms of goal conflict and information asymmetry (see e.g. Kivistö, 2008). However, our aim is not to confirm our preliminary assumption, but rather widen our knowledge about all the possible application of principal-agent theory in the field of higher education research. Thus the special focus of this literature review is given two main questions:

- How has principal-agent theory been employed in the field of higher education research?

- What are the advantages and disadvantages of its application in higher education research?

This can offer a useful insight for higher education researchers that are considering to use principal-agent theory or are willing to have new perspectives on principal-agent theoretical issues.

This paper includes the following sections: firstly, the method used and data is explained. Secondly, the key findings of the literature review are reported. Thirdly, the possible gaps for applying the principal-agent theory are presented.

Method

In this literature review we have applied Fink's (2010) systematic review module for data selection and reviewing process through the module has been simplified to fit the purpose of this paper better (see Figure 1). According to Fink (2010), a literature review can consist of seven steps: selecting research question, selecting article databases, choosing search terms, applying practical screening criteria, applying methodological screening criteria, doing the review and synthesizing the result (Fink 2010, 5). Fink (2010) also proposes to ask senior researchers advice for choosing the research terms and database as they have valuable knowledge in the field. In this review, we have consulted Dr. Jussi Kivistö from the University of Tampere as he has adopted the principal agency theory in his Ph.D. dissertation. However, the actual literature review is done independently within the group members and thus all the articles that have been included in this review are decided by the group.

Step-1: Selecting the research questions

As stated earlier, the research questions are following:

- How has principal-agent theory been employed in the field of higher education research?
- What are the advantages and disadvantages of its application in higher education research?

Step-2: Selecting the database

Database selection is based on Bray and Major's (2011) research where they focused on investigating the status of academic journals in the field of higher education (Bray & Major, 2011). According to Bray and Major (2011), higher education research journals can be categorized into three tiers, where the first tier has the highest prestige (status), the second tier consists of articles with good prestige and third tier express the moderate stage of prestige (Bray & Major, 2011, 490). In this review we have selected 14 articles altogether representing the following levels of prestige: three articles from *The Journal of Higher Education* (Tier 1), three articles from *Research in Higher Education* (Tier 1), five articles from *Higher Education* (Tier 1), two articles from *Higher Education Management and Policy* (Tier 3) and one articles from *Tertiary Education and Management* (Tier 3).

Step-3: Choosing search terms

Journal databases were searched using words and phrases such as: "principal agency theory", "principal-agent theory", "agency theory", "principal", and "principal-agent".

Step-4: Applying practical screening criteria

As the above search terms gave a wide range of different articles, we decided to set a timeframe and chose only articles that were published between the years 2005–2015.

Step-5: Applying methodological screening criteria

We followed the following sequence to screen out articles for analysis through asking the questions presented below:

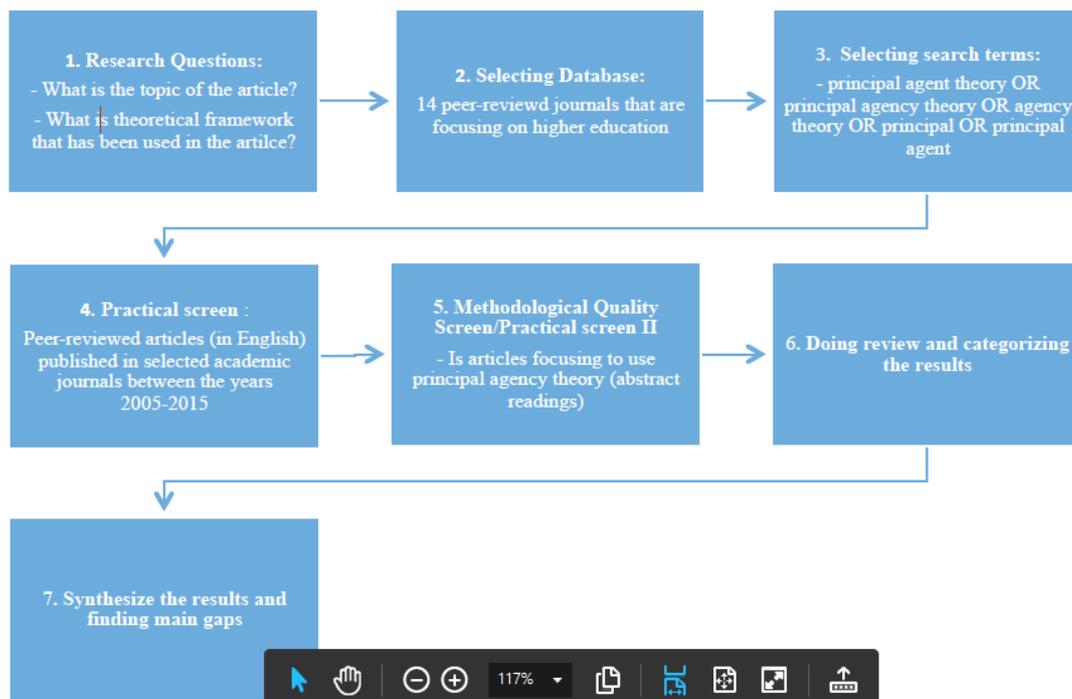
- What is the topic (theme) of the article?
- What research question (s) does the article try to answer?
- What level of analysis (level of the approach; individual, department, institution etc.) has been used?
- What is the theoretical framework that has been used in the article?
- How has principal-agency theory been adopted (independently or together with some other theory/theories)?
- What methodological approach (s) (qualitative, quantitative or mixed-method) have been used?

Parallel with that, we read abstracts of the articles and chose only those articles that were clearly focusing on principal-agency theory. There were many articles in which none of our keywords were present in the title or in abstract.

Step-6 and Step-7: Doing the actual review process and synthesizing the results

In order to have a better understanding of the different topics and the way principal agency theory was adopted, we formulated a category that will be introduced in the next chapter. The category includes the details of the articles (author, year of publication) and main themes in the field of higher education research. The latter one is applied by using Tight's (2012) view on the main topics of higher education research.

Figure 1. Process of literature review



Key Findings

In this section, we present a brief overview of the articles our database analysis yielded and present a summary of key findings (see Figure 2) using a framework adapted from Tight's (2012) work on researching higher education. According to Tight (2012), higher education research can be divided into eight main topics and themes: teaching and learning, course design, student experiences, quality, system policy, institutional management, academic work and knowledge and research (Tight, 2012, 7). We have also

taken into account the main level of analysis the articles utilized. In addition, we have identified the main gaps when using the principal-agency theory.

Figure 2. Category for Key Findings

	Teaching & Learning	Course Design	Students Experiences	Quality	System Policy	Institutional Management	Academic work	Knowledge And Research	Sum
Individual	Wilkesmann and Schmid (2011)								1
Department or Centre									
Institution					Shaoming Cheng (2014)	Lane (2007); Raudla, Karo et al. (2015)		Hee-Je Bak, Do Han Kim (2015); Joshua B. Powers, Eric G. Campbell (2011)	5
Region/Country					Hillman et al (2014); Titus (2009); Titus, Vamosiu et al. (2015); Kivistö (2005); Engwall (2007)	Enders, Boer et al. (2012)			6
System					Massay (2009)				1
International				Blackmur (2008)					1
Total	1	0	0	1	7	3	0	2	14

Hillman, Tandberg and Gross (2014) have adopted principal-agency theory for understanding the relationship between colleges and the Pennsylvania State System of Higher Education (PASSHE). In their study, one interest was to find out whether the colleges at Pennsylvania are able to achieve the performance goals that have been set by PASSHE. The special focus of their research was to find out if performance-based funding has increased the number of graduates within the higher education system in Pennsylvania State. In Hillman's et al. (2014) qualitative study, PASSHE is seen as the principal and colleges as agents. Data of their study consist of institutional records that have been gathered at the National Centre for Education Statistics Delta Cost Project database. The researchers compared a number of graduates from PASSHE higher education institutions to similar kind of institutions that do not use performance-based

funding model in this study. As a conclusion, Hillman et al (2014) pointed out that performance-based funding has not impacted the number of graduates. In that sense, a policy that supports accountability framework does not necessarily impact the way institutions are working. According to Hillman et al (2014), it can mean that there might be informational asymmetries between principal and agent, or the principal is using inappropriate tools and support for enhancing the action of agents. They also stressed that most likely agents do not understand the policy behind principal's actions. In addition, the agent does not necessarily have the capacity to perform those operations fully that have been set by the principal and thus performance-based funding has not enhanced the efficiency of the institutions (Hillman, Tandberg, & Gross, 2014).

The second article by Titus (2009), focused on investigating the impact of state's higher education financial policy on the production of bachelor degrees in the US. The theoretical framework of this study is based on higher education production function and principal-agent theory. The state is seen as principal and higher education institutions as agents. Titus (2009) used quantitative methodological approach, and data consist of annual state-level panels and altogether 49 states from the US are included. The data was analyzed by using dynamic fixed-effects panel model. In conclusion, Titus (2009) pointed out that increasing tuition fees in four-year public colleges or universities do not impact the production of bachelor degrees. However, need-based aid for students seemed to increase the number of bachelor degrees and thus has a positive impact. According to Titus (2009), it also seems that financial approaches by the state are complex and external factors impact higher education finance policy. He also noticed that in the case of US, higher education and public welfare compete directly for state funds, unlike K-12 education, which seems not to be a direct competitor with higher education (Titus, 2009).

In a more recent article, Titus, Vamosiu et al. (2015) have focused to study "how the state higher education governance structure and economic forces influence non-resident tuition at public doctoral universities within a state?" (Titus, Vamosiu et al. 2015, 927). This study has utilized many econometric techniques to answer the research question. This study has concluded that tuition of a non-resident student in public doctoral universities has been rapidly converged to the national average over the last twenty years. However, this convergence is affected by many factors in out-of-state tuition. These factors are mainly external market forces and higher education governance structures. It is also

evident from this study that external market forces affect the resident tuition and higher education appropriations to doctoral institutions. (Titus, Vamosiu et al, 2015.)

Lane (2007) studied oversight mechanisms between the state and higher education institutions. This study focuses on the situation in the US, and he used case study method with two different higher education institutions: Pennsylvania State University and the University of Illinois. The methodological approach used is based on qualitative semi-structured interviews and document analysis. In this research, the principal-agent theory is used as the primary theoretical framework, but the article also takes into account the conceptual approaches of manifest and latent oversight (adopted by research done by Ogul, McCubbings and Schwartz). In Lane (2007) study, institutions are seen as agents and state as the principal. Lane's (2007) starting point is that there are information asymmetries between agents and the principal. In order to fill the information asymmetries gap, the principal has to rely on different mechanisms. In this study, those external oversight mechanisms are the main focus, and the purpose of his research is to identify formal and informal (manifest and latent) oversight mechanism as well as identify the main external stakeholders that provide those mechanisms. Lane (2007) assumes that external oversights consist of various actors and rather an intricate interaction between different performers. One challenge is, however, to identify which actor actually is involved in the external oversight mechanisms, as some of the actors or activities might not belong to the formal structure (Lane, 2007). As a conclusion, Lane (2007) identified four key stakeholders that provide external oversight mechanisms to the two case-study universities: legislators, governors, state agencies and the public. Each of these groups provides oversight mechanisms that impact directly or indirectly the behavior of the universities. Lane (2007) states that some of the external oversight mechanisms have not been well recognized as they are rather hidden. One example of that is the role of the press in providing latent oversight mechanisms by publishing university related articles that might raise concerns within other external stakeholders. In that sense, the press might impact other stakeholder's approaches and behavior. Correspondingly, auditing or reporting represent manifest oversight mechanisms that are provided by state agencies, governors or legislators (Lane, 2007).

A similar kind of approach can be found also in Enders, Boer et al. (2012) study. They have used principal-agent theory to study the organizational autonomy and control and

its impact on the performance of universities. The scholars have reviewed extensive literature, mainly related to Dutch universities. They have reported that as the measures of university autonomy vary and the measures of performance mainly rely on output in the form research, it is therefore difficult to conclude that autonomy improves the performance (Enders, Boer et al, 2012).

Wilkesmann and Schmid (2011) have used principal-agency theory for finding the impact of new public management (NPM) based, managerial instruments on academic teaching performance of professors in German universities. These instruments include merit pay, performance related budgeting, management by objectives, and teaching rewards. The purpose of using these instruments is to align the goals of principals and agents. In this quantitative study, the professor is considered as the agent while the rector is considered as the principal. A sample size of 8000 German professors was used for the study. The researchers have concluded that the managerial instruments have no impact on the behaviors of the professors in their teaching (Wilkesmann & Schmid, 2011).

Blackmur (2008), in his critique on Guidelines of Good Practice (GPP) of International Network of Quality Assurance Agencies in Higher Education (INQAAHE), has used principal-agent theory as one of the theoretical frameworks to identify the weaknesses in GPP. He has noted that GPP is built on naïve assumptions and does not fully explain the complex relationship between national quality assurance agencies and governments. In addition to principal-agency theory, he has used the concepts such as economic regulation and transaction costs economics (Blackmur, 2008).

Raudla, Karo et al. (2015) have used principal agency theory and resource dependency theory to study “the implications and challenges of project-based funding of research for budgeting and financial management of universities” (Raudla, Karo et al., 2015, 958). They have studied the relationship between the central management of universities and departments. It was a qualitative study based on case studies of two public sector universities in Estonia.

In his 2005 article, Kivistö has pointed out that by applying principal-agent theory, it is possible to bring theoretical and analytical frameworks to demonstrate control and governance-related problems and provide a theoretical base, for example, establishing

quality assurance and develop performance based-funding models. Kivistö (2005) argues that agency has two problems: a problem of adverse selection and moral hazard. By adverse selection, he means pre-contractual situation where the principal assumes the agent to have certain abilities, willingness and efficient performance related to given tasks. The agent might have different mentality regarding characteristics and abilities mentioned and misrepresent capabilities in a pre-contractual situation in order to proceed to a post-contractual situation. The second problem, moral hazard, arises in the post-contractual situation when the principal has lack of control towards agent's actions, and efforts to rule over are costly and have a risk of failure. To overcome the problem of adverse selection the principal should expand actions to signalling and screening. In case of moral hazards, principal can try to monitor the procedures or agent's behaviour. (Kivistö, 2005.) As a conclusion, Kivistö (2005) argues:

The concept of adverse selection may explain why governments are trying to acquire information from institutions (screening) before making funding decisions. The concept moral hazard may explain e.g. why governments are creating quality assurance mechanisms and why they are choosing performance-based funding procedures instead of input-based funding procedures. Again, the examination of presented and other agency variables may offer valuable insights for governments and HEIs when deciding between different funding and control instruments (Kivistö, 2005, 13).

Massy (2009) focuses on describing the relationship between market forces, policy-making, and universities, which mostly don't have the option to choose whether to pay attention to market forces. The question that arises from Massy's (2009) article is, "How to give the market its due while remaining true to academic values?" (Massy, 2009, 59). The agency theory has been used as a framework to describe how "to prevent "agents" (e.g. universities and their faculties) from diverting resources provided by a "principal" (e.g. government or a central administration) to further local goals" (Massy, 2009, 64). Agent's freedom can be controlled and limited by markets, but it can also have different outcomes in different circumstances. Principal's decision-making can become automatic with optimal formulas stimulating the markets once the rules are agreed. The principal can also try to affect agents by proving that principal's interest will be the best interest also for the agent in long run. This can be considered as using soft power. Massy (2009)

uses agency theory to describe higher education institutions structural solutions, centralization vs. decentralization, by questioning how much decentralization, if any, should be allowed in the determination of expenditures. As a conclusion, he states that governments are facing postmodern challenges because of the paradox of wealth. As a solution to this challenge Massy (2009) states that governments and higher education institutions' academic and administrative leadership should collaborate in creating solutions (Massay, 2009).

Cheng (2014) has also adopted principal-agent theory in the frame of executive compensation in public higher education. The data of Cheng's (2014) quantitative study is gathered from 128 research universities. Cheng pointed out that there seems not to be a strong connection with the university presidents' salary and variables that are related to performance, especially if time frame and temporal autocorrelation are taken into account. In the section dedicated to the literature review, a mainly principal-agent theory centred analysis is given asserting that the theory has been recently used to analyse governance and administration related issues. It is claimed that research into executive performance and compensation mechanisms mainly are conducted using the principal-agent perspective (Cheng, 2014, 583). The researcher starts with the premise that the 'agency problem', and 'agency costs' become higher, the more autonomous and independent the agent is. Cheng (2014) is also citing Lane (2012) stating that principal-agent problems become much more complicated in higher education than other establishments due to the presence of multiple principal-agent relations. When it comes to university leaders the problem becomes more fragmented due to the university leaders' high level of autonomy and due to the fact that they are accountable for multiple principals, and they are assessed with different and varying performance metrics. The 'low weak pay-performance' link is also underscored as a problem. In general, the principal-agent theory has been used in this particular article as a tool to review the literature about agency problems in higher education institutions. The theory does not seem to inform the data analysis of the paper, however. One of the major accomplishments of the article is the development of performance outcome indicators for assessing executive compensation (Cheng, 2014).

Bak and Kim (2015) investigate the validity of the claim that overemphasis on research has led to poor quality of teaching in higher education. They used one Korean university

as a case study and collected data from 1052 individual faculty members teaching evaluation scores and research productivity in the science, engineering, and medical fields between 2004 and 2010. Bak and Kim (2015) used a quantitative methodology and they relayed especially on multitasking theory as their main theoretical framework. This theory is presented as a solution for the lack of sophistication that principal-agent theory is speculated to manifest. According to Bak and Kim (2015), “Multitasking theory removes the single task assumption of the simple principal-agent model and accepts that the agent performs multiple tasks or a single task with several dimensions” (Bakl and Kim, 2015, 847). In a multitasking situation, it is also stated that performance incentives systems motivate the agent to put in more effort and to reallocate his/her attention among various tasks. In other words, if the incentive structure rewards some tasks more than others for the same level of agent’s efforts, the agent may concentrate all efforts on incentivized tasks at the expense of the others (Holmstrom and Milgrom 1991; Marschke 2001). In line with this assertion, the article presents an argument that the data analyzed suggested that financial incentives on research rather than teaching could have redirected the attention of some professors from teaching to research, thus reducing teaching quality, as proposed by advocates of multitasking theory. Therefore, as a recommendation, an incentive structure that assures each task or activity offers professors the same marginal return on their efforts is put forward.

Powers and Campbell (2011) used agency theory in their investigation of commercialization effects on the conduct of research in higher education. The researchers focused their study in US universities utilizing data drawn from databases and licensing and contract documents of university-industry linkages and faculty research output (Powers and Campbell, 2011, 243). A quantitative methodological framework is adopted to make the investigation. The paper starts with the premise that it is becoming very crucial for universities to engage with society in projects of practical significance through strategies like knowledge transfer and play an active role in the triple helix synergy. Agency theory is used in combination with innovation diffusion theory in the article’s theoretical framework. Combining the two theories, the researchers hypothesize that exclusive licensing will have a negative effect on innovation diffusion, and the motivation of faculty inventors to collaborate with others in their research activities. It is also argued that “principal-agent forces may have differentially impacted the norms of commercialization practice for public versus private universities’ (Powers and Campbell,

2011, 244). In addition, they also assumed those stronger principal-agent relationships exist in public universities than private ones in the conduct of science. The researchers used principal-agent theory also to inform the analysis as well. One of the major policy implications of their findings was, “Principal-agent relationship differences, possibly fueled by excessive expectations placed on public colleges and universities as drivers of economic development may also be dampening the historic forms of knowledge dissemination” (Powers and Campbell, 2011, 256). As areas of future investigation, the researchers also suggest that principal-agent relationships could be investigated to explore a state’s regulatory climate and governance structures designed to provide oversight of universities engaged in commercialization activity (Powers and Campbell, 2011).

Engwall (2007) analyses university governance in relation to growing demands from society and managerial perspectives in Sweden. He focuses on two governance mechanisms called entry control and performance control, through theoretical framework of principal-agency. Literature Engwall (2007) uses to describe the principal-agent theory is based on the observation that principals have a problem of control, which can be seen as a form of lack of management in their institutions. When agents are hired to solve problems as external consultants or workers, the risk of opportunistic behaviour on behalf of the agent comes into question. The main problem is not only the issue between principal and agent but also the question is different behaviours that occur in different institutions (Engwall, 2007). Entry and performance control mentioned above vary between different institutions and have two levels, low and high. Small private companies tend to have a low level of control, whereas, in a situation where more external stakeholders are involved and a company goes public, it will face more external control related to performance. Opposite to this is a situation where state-regulated profession, such as legal system, is controlled publicly but the control of performance is self-regulated. In universities, this entry and performance control is the result of a fact that governments have strong controlling power over financing higher education institutions. As a conclusion to the government-university relationship in the framework of principal-agent theory, Engwall (2007) pointed out that states have a crucial role for steering and controlling the institutions and ensuring that institutions will follow certain standards via people that are able to commit themselves in state-owned organizations. He also states that Swedish higher education system has gone through remarkable change, most

importantly in the recruitment of university leaders to fit the purpose of supporting principal's targets alongside strong mimetic forces (Engwall, 2007).

Gaps of using the principal-agency theory

One of the assumptions in principal-agent theory is based on the idea that the agent is doing operations on behalf of the principal and serves also the best interest of the principal. This situation can be identified for instance in the government and university relationship where a government has created a university to perform those operations that it thinks are useful for society, but does not have competence, time or other resources to do that by itself (Hillman et al., 2014; Lane, 2007). According to principal-agent theory, this kind of relationship can consist of goal conflicts and information asymmetry. In cases where researchers' interest is focusing clearly on these aspects, then principal-agency theory might give a useful theoretical perspective. However, in cases where information asymmetry or goal conflict does not exist, the principal-agency theory might not give appropriate theoretical insights.

There are also many other reasons for the limited use of agency theory in higher education. Kivistö (2008) has noted that the main reason for the limited use of agency theory is its very narrow and cynical assumptions about human motivation and behaviour. Focusing only on the opportunistic motives and behaviour, agency theory ignores many other motives; for instance, altruism, intrinsic motivation to certain tasks, respect, and trust. This assumption has important implications when agency theory is applied for analysing government-university relationships (Kivistö, 2008). If academics are considered as self-interested utility maximizers, then "a high level of realism, objectivity, and tactfulness will, undoubtedly, be lost" (Kivistö 2008, 346).

Lepori, Usher et al. (2012), while identifying different budgeting approaches in higher education institutions (HEIs), have pointed out that due to complex nature of HEIs "principal-agent theory will fail [to explain the impact of different budgeting approaches] if departments are so strong that the central power will not be able to control departmental agency leading to a high risk of shirking and of coalitions between departments jeopardizing linked incentive systems" (Lepori, Usher et al., 2012, 71). This finding shows that the principal-agent model can only be very selectively applied to HEIs (Lepori, Usher et al., 2011).

In another study, Nisar (2014) has pointed out that principal agency theory assumes, "There is a distinct (largely predictable) relationship between governance policies and outcomes i.e., if the policy is designed correctly, it will lead to the desired outcomes. As discussed above, the impact assessment studies of performance-based funding policies problematize such simplistic assumptions. We, therefore, need an explanation which accounts for the "unintended consequences" of policy" (Nisar, 2014, 296).

Conclusion

In this paper, we have focused on investigating the principal-agent theory and how it has been adopted in the previous studies in the frame of higher education research. According to this review, the principal-agent theory was usually adopted in the studies that were focusing on system policy or institutional management. This is understandable in the sense that principal-agent theory is originally developed in economic sciences. Course design, student experiences or academic work were not, however, in the focus of the selected articles. The approach of the studies was found to be at the institutional, regional/country or system levels. It was also found out, that principal-agent theory was applied in both qualitative and quantitative research.

This review did certify our understanding of principal-agent theory and its strengths. Informal asymmetries and goal conflict are clearly present in government-university relationships, which creates favourable conditions for the appearance of the agency problem. The principal-agent theory also gives a good possibility for categorization and finding conceptual links between different governance procedures and conditions causing the agency problem by allowing more systematic and theoretical analysis. In addition, the principal-agent theory can offer insights related to questions regarding universities' compliance with the government's goals in exchange for the resources they receive. It is also possible to adopt principal-agent theory when the research aim is to understand faculties, departments and universities (as agents) to develop the factors governmental (principal) requirements are met and to demonstrate that the goals are accomplished.

On the other hand, the principal-agent theory might not give an appropriate approach for studying human behavioural aspects of higher education as it rather simplifies interaction between individuals. The principal-agent theory is also based on a rather narrow vision for the relationship between higher education institutions and governments. Thus, it is not

successful for explaining the complex relationship between universities and governments. In addition, the theory examines relationships without questioning legitimacy or justification of principal's goals. These factors might have contributed to the fact that the theory has not widely been used in higher education studies.

What we found particularly interesting was, that the development of principal-agent theory can take into account of multiple dimensions of agent-principal relationship and more than one principal can be actually included in the research. This theoretical framework is called multitasking theory and it was mentioned in Bak and Kim (2015) article. Their focus was to investigate the relationship between research and teaching. Especially in the field of higher education research, multitasking theory can give new opportunities for scholars to adopt principal-agent perspectives.

In conclusion, we would like to finish this review by stating that principal-agent theory is a good starting point to analysing stakeholder relations in higher education; however, the explanatory powers of the theory need to be developed to successfully explain the complex interactions that exist between the multiple principals and agents in a higher education setting.

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