

## Amsterdam University of Applied Sciences

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*Published in:*  
Information and Knowledge Management

[Link to publication](#)

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*Citation for published version (APA):*  
Parham, S., & Wang, Z. (2017). Budget deficit and challenges of knowledge management in higher education: a case study of two international universities in the Netherlands. *Information and Knowledge Management*, 7(8), 1-13.

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# Budget Deficit and Challenges of Knowledge Management in Higher Education: A Case Study of Two International Universities in the Netherlands

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## Abstract

Over the past decade, knowledge management has become an increasingly important and critical issue. Both the scientific and commercial communities maintain that organizations with knowledge power can sustain their long-term competitive superiorities. Universities and higher education institutes are the main centers for the production and dissemination of knowledge and, as such, it is certainly necessary for them to implement an appropriate Knowledge Management System (KMS). In the 21<sup>st</sup> century, successful educational organizations will make use of knowledge and information in a more efficient way and will apply it to the creation of value. To cope with globalization, it is essential for Higher Education Institutions (HEIs) to effectively implement KMS in their organizations which will lead them to create more value and stay competitive. Even so, universities are facing a number of challenges while implementing KMS and budget deficits is one of the factors affecting the KM process in higher education institutes. There has not been adequate study on the impacts of budget deficit on KM activities in HEIs. The question that arises is: how can these learning organizations overcome budget cuts and simplify the implementation of KM? The present study aims at investigating the challenges faced by two international universities in the Netherlands. Therefore, the study was conducted through case study design and used the Grounded Theory (GT) approach to unfold the impacts of budgetary deficit on the implementation of KMS within this context. A literature review method has also been used to get a deeper insight into some causes of budget deficit in HEIs. Initial findings of the study show that budget deficits have negative impact on KM activities in HEIs including increased workload for teachers, decrease in knowledge dissemination through publication and longer processes of problem solving activities.

**Keywords:** Budget Deficit, Knowledge Management, Challenges, Higher Education, International Universities in the Netherlands, Grounded Theory

## 1. Introduction

We are living in a continuously changing environment due to globalization which is characterized by the knowledge-based economy, constantly developing Information, Communication and Technology (ICT). The continuously changing environment not only brings some challenges to organizations, but also presents opportunities to all kinds of business sectors (Cong and Pandya, 2003). Kefela (2010) stated that the growing importance of knowledge creates a great basis for nations to improve their economy and social development by offering more efficient strategies and tools for production and services as well as effective delivery system to a large number of people. Human knowledge, skills, expertise and creativity are the main source of wealth creation in today's business world (Kefela, 2010). Rollwagen and Voigt (2013) argued that knowledge has increasingly become a strategic tool for value creation and economic development. In the 21<sup>st</sup> century, knowledge has been considered as a vital tool of value creation for countries, organizations and individuals (Kefela, 2010).

According to Tippins (2003) academic environments such as institutes, colleges and universities are necessarily the collections of experts, professionals and scientists who form an approved body of knowledge to be employed in a wide range of areas. Therefore, academic institutes, including universities, have been traditionally considered as a knowledge transfer system which provides the students with the required knowledge in order to deliver optimal performance in the labor market (Tippins, 2003). However, achieving good results depends on many factors, such as: careful recruiting of professionals, proper ways of knowledge sharing, capturing up-to-date knowledge and so on (Tippins, 2003; Devi Ramachandran, Chong & Wong, 2013). Higher Education Institutions can be transformed into effective learning organizations by implementation of KM, where organizational activities are properly aligned with business objectives (Sunalai and Beyerlein, 2015). Nevertheless, some challenges of KM are not adequately addressed yet in the literature.

Rowley (2000) formulated the following question: "Is Higher Education ready for Knowledge Management?" He argued that many knowledge resources are not properly organized and that there is no clear definition of relationships between various sources, which results in difficult access to the required knowledge. Furthermore, the main challenge is creating a knowledge environment which requires a considerable progress (Rowley, 2000). The implementation of KM in HEIs has been affected by the financial constraints that these institutes are experiencing. As a result, considerable organizational changes may be required to simplify the

implementation of KMS in higher education (Rowley, 2000). This paper investigates the challenges that implementing a KMS within higher education brings and reveals the effects of budget deficits on the KM processes in the context of the study. The research uses a case study design with a GT approach.

## 2. Dutch Higher Education Context

There are three different types of higher education institutions in the Netherlands, consisting of: government founded approved and private institutions. Government founded institutions in the Netherlands include fourteen research universities and over fifty universities of applied sciences (EP-Nuffic, 2011). These universities vary in size, mission, history and values. The Ministry of Education, Culture and Science, or the Ministry of Economic Affairs provides funding to these institutions and they are entitled to award officially recognized degrees (EP-Nuffic, 2011). In 2012, the Dutch coalition cabinet introduced budget cuts for higher education institutions which has resulted in some issues including but not limited to decrease in the number of students, tougher standards for teachers, significant increase in faculty workload and scrapping free school books (Visscher, 2012; Academic Cooperation Association, 2012).

The Dutch government has always put an emphasis on excellent education, moreover with budget cuts being implemented, universities have gone through major changes to gain maximum efficiency within their organizations. For this purpose, effective implementation of KMS has become a necessity.

In recent years, qualification frameworks have been the center of attention within the European Higher Education Area. The main aim of this instrument is to simplify the learners and employees' mobility within the university as well as facilitating the recognition of qualifications (EP-Nuffic, 2011). Higher Education Institutes in the Netherlands use two types of qualification frameworks, namely the Dutch qualification framework (NLQF) and the National qualification framework the Netherlands. These two frameworks describe HEIs qualifications in terms of learning outcomes (EP-Nuffic, 2011). To enhance learning outcomes of HEIs, KM has become the center of attention.

## 3. Literature Review

### 3.1 Higher Education and the Knowledge Based Economy

According to Birgeneau (2005), the ever changing global economy brings many challenges to HEIs such as: a more interconnected world in which knowledge, creativity and innovativeness are the most prominent characteristics of successful societies. Bloch (2005) pointed out that we are living in a knowledge era and that knowledge is the key strategic tool in the hand of educated people for gaining value. In today's world, universities are experiencing considerable pressure caused by globalization (Bloom, 2005). Scott (2005) defined globalization as the integration between countries particularly through transferring and exchanging goods, capital, workforce and ideas.

In today's business world, the movement of capital, workforce, goods and ideas is not difficult; nevertheless, when regarding universities as knowledge-based organizations, a question that comes to mind is: what do these organizations need to do to stay competitive? What do they need to do to ensure their students' academic excellence and practical experiences? Being under pressure by globalization led universities to conduct more research and consequently find more proper ways to manage their intellectual capital (Cranfield and Taylor, 2008). Even so, KM challenges should be taken into account and these learning organizations should come up with practical solutions to overcome these challenges. Nowadays, HEIs are facing budget deficits which can significantly affect the implementation of KM within these organizations. This paper looks at whether international HEIs in the Netherlands are able to respond to this challenge in an effective manner. Whether they are considering to implement changes in the internal processes of their organization, or if they are planning to maintain the same operating activities. This study aims at investigating the effects of budget deficit on the implementation of KM within two international HEIs in the Netherlands.

### 3.2 Knowledge Management

Kanagasabapathy et al. (2002) argued that measuring knowledge is not a simple procedure, therefore, in order to benefit from the organizational intellectual capital, and to gain advantage it is essential for managers to effectively manage their intangible assets. Mason (2013) stated that there is a controversy among researchers about the definition of KM, but there are still some basic concepts that are generally accepted. KM is a tool for identifying the power of the human mind and extracts this intangible asset in order to apply it in the most efficient way possible, and lead the organization to gain competitive advantage.

Davenport and Prusak (2000) discussed that universities already deal with KM, and that they try to derive information from data, and convert information to knowledge by employing KM. This process occurs when certain human beings apply their knowledge, expertise, and experiences to create value and share the knowledge through communication for further value creation. Indeed, KM is extracting value from available resources of an organization by strategic human resource management; proper information system management and

organizational change management (Davenport and Prusak, 2000). According to Birgeneau (2005) HEIs are, and will always be, the producers of knowledge. The main purpose of academia is training people, improving their skills, strengthening their expertise and enabling their creativity to provide the labor market with high performance workforce. Rowley (2000) pointed out that universities are knowledge-based businesses due to dealing with knowledge creation, knowledge sharing and dissemination, as well as constant learning new skills. Considering the mission of universities, it is important to investigate whether knowledge is properly managed to enhance the academia performance or not. Do universities effectively manage their intellectual capital to stay competitive?

Tippins (2003) indicated the fact that HEIs commonly face difficulties when trying to implement KMS. According to Nawaz and Gomes (2014), HEIs should be constantly evolving, creating, researching, analyzing, forecasting and responding to their changing environment. All learning organizations, including HEIs, should avoid unnecessary knowledge activities and increase their staff awareness in regards to their changing roles in knowledge based society. Kok (2007) emphasized that the processes associated with knowledge creation in universities should be consciously and explicitly managed. He further argued that these organizations should recognize the role of their intellectual capital in value creation for academic community and global marketplace. Still universities face many challenges in the knowledge economy including but not limited to extending knowledge, improving specialist skills, engaging effectively in knowledge production, being interconnected with the industry, conducting research and delivering top quality graduates to the market (Abdullah et al., 2005; Kok, 2007). The questions that arise are: how can budget deficits affect the KM activities of HEIs? , and how can HEIs effectively overcome these challenges and simplify the implementation of KM within their organizations?

### *3.3 The Role of Knowledge Management in Higher Education*

According to Yeh ( 2005) and Kok (2007), there are two perspectives of KM in HEIs , 1) Academic knowledge that results from learning and teaching activities, this is the main purpose of universities; 2) Organizational knowledge that results from the overall function of an HEI and its relationship with external stakeholders.

KM activities in HEIs include research activities (knowledge acquisition), teaching activities (dissemination or knowledge sharing), decision making and problem solving activities (knowledge application) and knowledge documentation (Nawaz & Gomes, 2014). However, these activities will not deliver the desirable results if there is no clear KM strategy defined by the HEI. Moreover, a knowledge sharing culture within the organization and among the staff is crucial (Suciu, Piciorus & Imbrisca, 2012; Fritzsche & Germany, 2012). Kidwell, Linde and Johnson (2000) classified the KM method in HEIs into five main categories including; achievements on the research processes, the curriculum development processes, administrative services, students and alumni services and strategic planning. Still HEIs face many challenges in implementing KM in their organizations. Some of these challenges will be discussed in the next paragraph.

### *3.4 Some Challenges of Knowledge Management*

In a study conducted by Jennex (2007), it was attempt to pinpoint the key factors of successful implementation of a KMS. His findings emphasized the importance of portals as a critical component of a KMS. In another study done by Mandviwalla, et al. (1998), they found that the process of designing a KMS is affected by several issues including the users of the KMS, the amount and format of the knowledge to be achieved, what should be omitted and what should be maintained or changed. In addition, other factors such as storing knowledge, applying up to date knowledge and organizing knowledge in an efficient way that can be used for generating value impact the KMS implementation process as well (Akhavand et al., 2010).

Davenport et al. (1998) investigated the important factors that contribute to the success of a KMS by monitoring 24 companies. As the result they identified the following factors to be important:

- Receiving support from the senior manager
- Communicating the purpose of KMS clearly throughout the entire organization
- Making a proper link between KMS and financial performance
- Transferring knowledge via multiple channels
- Employing an appropriate motivation system for KM users
- A knowledge sharing culture in a friendly environment
- A solid but flexible organizational structure

According to Ginsberg and Kambil (1999) the most important issues that affect the implementation of a successful KMS include knowledge storage, dissemination, renewal, applicability and quality control. Findings of Alavi and Leidner (1999) showed that hierarchical organizational structure, lack of knowledge sharing culture and lack of motivation between users are main barriers for an efficient KMS. Rowley (2000) stated that in order to successfully implement KMSs in organizations it might be essential to change organizational culture, values and structure. He believed that the relationship between knowledge and power should be strongly managed.

It has been observed that KM activities in HEIs have also been affected by budget cuts during the past

decades. The following section will present some of these observations.

#### 3.4.1 The Effects of Budget deficits on KM in Higher Education

Budget cuts are not recent in Higher Education, they have been present for many years and affected HEIs all around the world. According to Cranfield and Taylor (2008), in 1980, the UK government introduced full cost fees for overseas students to oblige students to pay qualified education expenses. In 1981, major cuts in the public funding of HEIs took place which affected universities all across the UK. Consequently economic and administrative efficiency became a priority within universities and significant changes occurred in institutional management. A study conducted by the European University Association in 2011, shows that Latvia was the first country in European Union that faced major cuts in public funding of higher education. In 2009, universities in Latvia suffered 48 percent reduction in funding which was followed by an additional cut of 18 percent in 2010. These budget cuts resulted in significant changes in the Higher Education system of Latvia. HEIs in other European countries including but not limited to Italy, the Netherlands, Scotland, and Ireland have been affected by budget cuts to varying degrees (EUA, 2011). Higher education in the United States has also been affected by budget reductions and public universities are now facing the severe budget cuts (Geiger, 2015). Some states, including California with the largest public higher education system, experienced a 20 percent cut in funding which will negatively affect the quality of the education and services by universities (Geiger, 2015). A similar situation has been observed in relation to HEIs in Asia. Hunter (2016) stated that: "Higher education institutions [in Malaysia] had their budget slashed by RM2.4 billion (US\$573 million), from RM15.78 billion (US\$3.8 billion) in 2015 to RM13.37 billion (US\$3.2 billion) for the year 2016." This has led Malaysian universities to seek ways to adjust their spending patterns in a short time which caused problems in some areas of the education system (Hunter, 2016).

This paper particularly looks at how KM activities are affected by budget deficit within two international universities in the Netherlands.

## 4. The case

### 4.1 The Context of the Study

The context of this study contains one Research University and one University of Applied Sciences. As mentioned before these institutes vary in size and mission. The Ministry of Education, Culture and Science, or the Ministry of Economic Affairs provides funding to these institutions and they are entitled to award officially recognized degrees (EP-Nuffic, 2011). The HEIs in this study are international universities that employ staff from all over the world and recruit international students. Findings of this study are applicable to other international HEIs regardless of geographical location.

### 4.2 Methodology

#### 4.2.1 Grounded theory (GT)

In late 1960, Glaser and Strauss developed GT as a research strategy. GT is defined as a systematic methodology in social science which involves the construction of theory about real-life situation by coding, categorizing and analyzing qualitative data (Glaser, 1992; Allan, 2003). According to Creswell (2012) and Gibbs (2008), in the GT approach a researcher does not use the existing literature as a theoretical background but instead, builds theory through applying the analytical strategies to the research. There is more to research than examining the existing theory, and today's researchers can still develop theory. The emergence of new theories could be achieved by the application of GT technique (Glaser and Strauss, 1967). A GT study begins with a problem analysis and formulation of a research question that confines the phenomenon to be studied. The existing literature, however, is not a fundamental part of a GT technique. The researcher's experience and the quality of the analytical processes are considered to be key factors in applying this method. The rationale behind the GT approach is to encourage critical thinking and discovery (Bitsch, 2005).

Glaser (1998) stated that "theoretical sensitivity" is a key concept of the GT approach, which refers to the extent to which the research is able to think of data in theoretical terms and unify complex knowledge in a research situation.

There are different perspectives and approaches to GT techniques, however this paper only illustrates the approach that is used for the purpose of this particular study. Figure 1 shows the process of theory development through the use of the GT method.



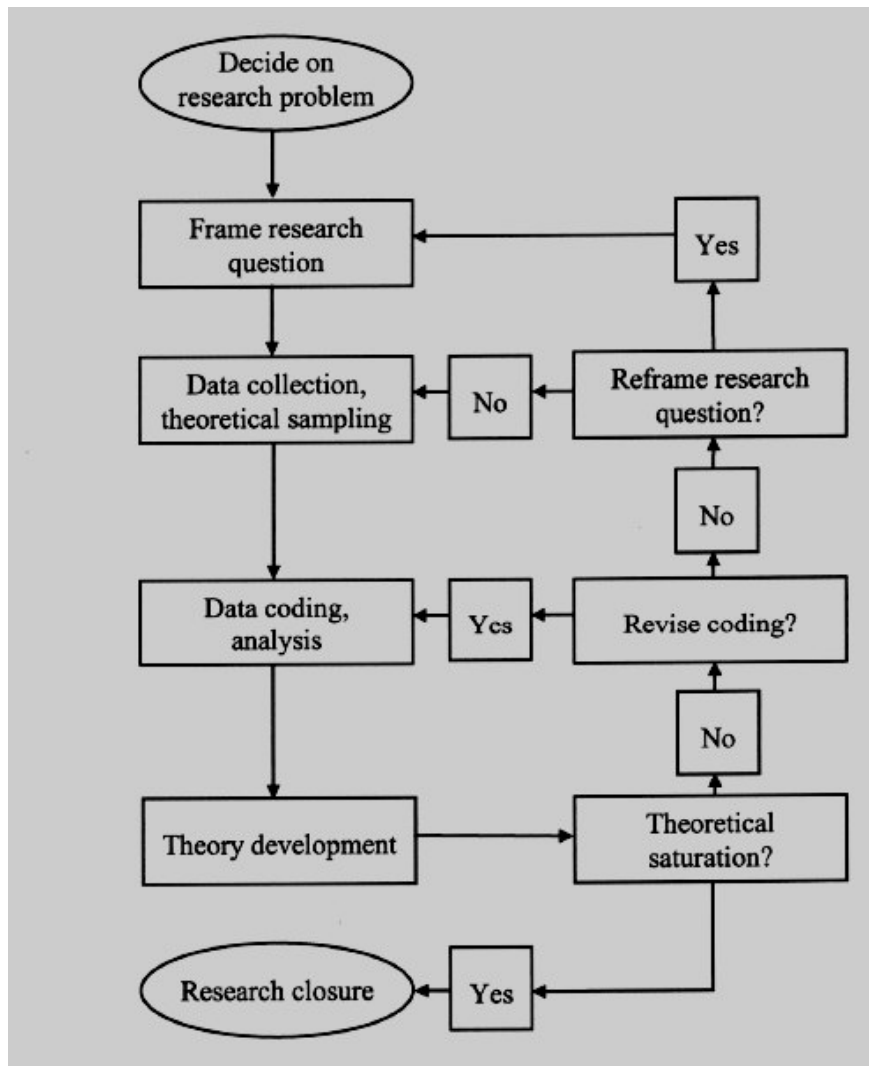


Figure 1. GT flow chart, Source: Bitsch (2005, p.78)

#### 4.2.2 Qualitative methods used

##### 4.2.2.1. GT and case study

For the purpose of this study, a case study design was chosen and combined with GT in order to unfold the impacts of budgetary deficit on the implementation of KMS within two international universities in the Netherlands. According to Eisenhardt (1989), theory building from the combination of case study with the GT technique has three strengths including: 1) the likelihood of generating novel theory, 2) testability of the new theory, 3) the generated theory is empirically valid. Theory construction from cases is particularly well suited for new research areas when the existing literature is not adequate to explain the situation at hand (Eisenhardt, 1989). Implementation of KM within HEIs is relatively a new subject and there have not been many studies about the impacts of budget deficit on KM activities in universities. Therefore, a case study design through the GT approach is considered as a proper method for this specific research.

Zainal (2007) defined case study as a method that gives researcher the opportunity to closely investigate the data within a specific context. In a case study approach, often a small geographical location and (or) a few individuals are targeted to be studied under a specific situation (Zainal, 2007). Yin (1994) argued that a case study design can be based on a single or multiple case studies with a nature of descriptive, exploratory or explanatory study. The current research used multi case approach including two international universities to be investigated with an explanatory nature. Semi-structured interviews were conducted with a limited number of individuals at both case locations. Participant observation was also performed for a period of 6 months to add more credibility to the research.

To analyze the data, the interview transcripts were coded and analyzed using Nvivo 10. Further data collection and constant systematic coding was implemented to achieve theoretical saturation.

##### 4.2.2.2. Literature review method

According to Cranwell and Daly (2001), a good literature review encompasses collecting information about the

subject of interest from academic sources. It follows a clear and accurate selection strategy which limits personal biases. Cronin, Ryan & Coughlan (2008, p.43) argued that “the review should conclude with a concise summary of the findings that describes current knowledge and offer a rationale for conducting future research.” They further added that in performing literature review for a part of a research, gaps identified in existing theory should be logically filled based on the objectives of the study.

For the purpose of this research, literature review was used to enrich the data and interview results in regards to the causes of budget deficit, while in order to fill the knowledge gap about the impacts of budget deficit on KM activities, the GT approach was used.

#### 4.2.3 Data collection method and sampling

This research was conducted in two international universities in the Netherlands. From these two universities one is a research university and the other one is a university of applied sciences. Each of which has seven faculties. For the purpose of this study, a semi structured interview and participant observation were chosen as the data collection methods. Sampling method for this research was purposive and participants in the in-depth interview were chosen based on their knowledge and positions in each faculty from these two universities. The tables below show the types and sizes of these two institutes, and the role of participants in the in-depth interview.

Table 1. Types of the institutions participating within the case study (2016)

Type of the institution	Year of foundation
Research university	1632
University of Applied Sciences	1993

Table 2. Size of institution participating within the case study (2016)

Size of the institution (students)	Size of the institution (employees)
30,000 (Research University )	5,000
43,000 (University of Applied Sciences)	2,300

As mentioned before, participants in the interviews were selected based on purposive sampling technique. The rationale behind choosing this sampling method was the necessity of possession of specific knowledge and information about KM systems and processes in the case locations. All interviewees were either senior members of staff or part of the management team. The participants’ roles are presented in table 3.

Table 3. Participants Role

ROLE	NUMBER
<b>RECTOR / BOARD MEMBER</b>	3
<b>FACULTY DEAN</b>	2
<b>PROGRAM MANAGER</b>	2
<b>COMMUNICATION</b>	2
<b>TEACHING / RESEARCH STAFF</b>	2
<b>TOTAL</b>	11

#### 4.2.3.1 Structure of interviews

For the purpose of this study semi-structured interviews were conducted. The study aimed at gaining insight into the effects of budget deficit on the implementation of KM in higher education. To explore the impact of budget deficit on KM interview questions were formulated under several concepts including; status of KM in the organization, budget cuts, internal processes and communication. Moreover, scanning the literature for KM activities in higher education resulted in formulating some interview questions based on the categorization of KM activities by Nawaz & Gomes (2014) to gain more insight into how budget deficit can affect research and teaching activities.

Although in a study based on the GT approach researchers should enter the field with a clear mind and ensure that the generation of new theory will not be influenced by existing literature, in order to formulate interview questions it was necessary to conduct some literature review and understand existing KM models in higher education. Cranfield and Taylor (2008, p.92) pointed out that: “This approach is consistent with researchers who have studied and used GT and have found that entering the research field without any preconceived ideas, frameworks or an understanding of the area is very difficult to do, and there is debate about the aimlessness that could happen if there is no idea of the theory of the field of research.”

## 5. Initial findings

The findings of this study have provided important insights into the KM activities of two international HEIs within the Netherlands and the way that these activities are affected by budget deficit. As the result of interviews and literature review some causes of budget deficit were also identified which will be further discussed:

### 5.1 Some causes of budget deficit in higher education

5.1.1 Students' delayed graduation: Due to the nature of the budget planning of Dutch HEIs, anything that potentially keeps students from on time graduation is considered as an undesired situation by the management. If students do not graduate on time the institute will not be entitled to receive graduation subsidies from the government. "The longer it takes for students to (graduate) , the less money we get. We also receive money for each student enrolled. Foreign students pay the full tuition fee. But the Dutch students pay less compared to a (foreign) student. The most money we receive (comes) from graduates, as the student numbers back up." said one of the managers. The interview results revealed that the factors that cause delayed graduation include but are not limited to: inter-organizational student mobility, extra-curriculum courses, and excellence and honor programs.

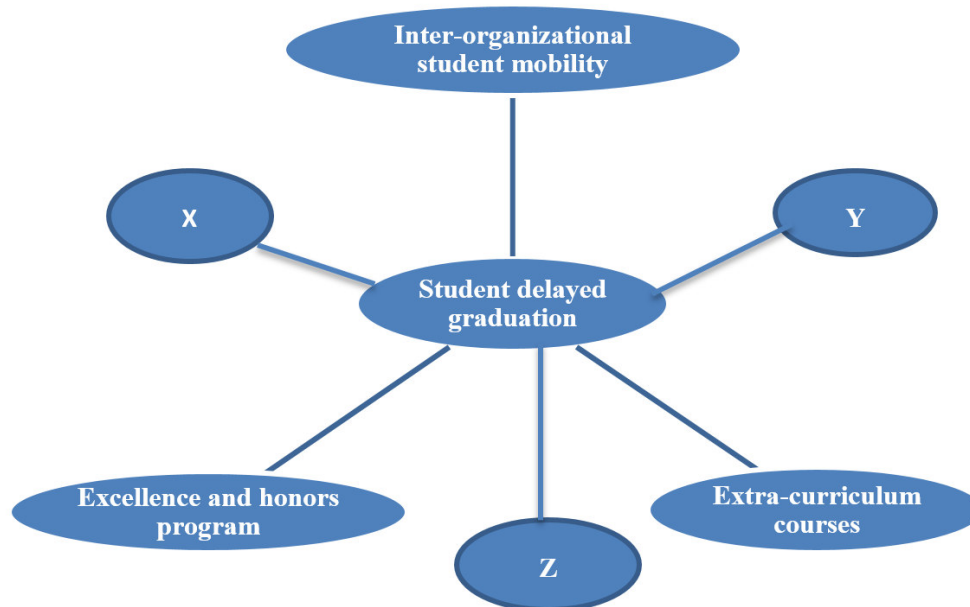


Figure 2. Factors that cause delayed graduation

Inter-organizational student mobility, except for the mandatory exchange program within a study program, is not encouraged due to its association with the risk of study delay. This includes students who seek a dual-degree, an extra minor or an extra course at an external institute. In the Netherlands, students are entitled to take courses from other universities if the tuition fee of the second institute is not higher than the original institute. In practice, these conditions will lead to students' delay in graduation and therefore is considered as undesired situation by the HEIs.

There are more factors (X, Y, and Z) that can cause delayed graduation, however the results of the interviews show that the above mentioned factors are the key influencers on on-time graduation within the two institutes.

#### 5.1.2 Students dropout rate

There are many factors that may cause students to drop out of university. A high dropout rate will cause more financial problems for HEIs since the graduation bonuses will not be given to the institutes while faculty spent hours on teaching these students before they quit their study program.

Brandsma-Dieters (2013) argued that several factors can lead to students' dropout and these include: student experience, program choice, social environment, demands of the program, institutional factors and financial considerations.

- **Student experience:** According to Yorke (1999), there are three main factors that affect student experience including organization of the program, the quality of teaching and level of support from staff. Lewis and Castley (2008) argued that students need to receive good support at an early stage, before any problem arises. The student experience can be enhanced by a good introduction program. Grayson (2003) pointed out that early experiences are key determinant of student retention. The large amount of information given in the first few weeks often causes students to feel overwhelmed, therefore emotional, social and academic support is considered as a success factor by students (Glogowska et al., 2007; Lubben, Davidowitz, Buffler, Allie & Scott, 2010).
- **Program choice and demands of the program:** Some students experience difficult time after they start their studying in HEIs. This can be caused by a wrong choice of study program and (or) the demands of the program (Brandsma-Dieters, 2013). One of the main factors that leads students to drop out is the poor choice of study program (Yorke, 1999; Christie et al., 2004; Van Onzenoort, 2009). A



poor choice of study program relates to a discrepancy between students expectations and the actual program. Research findings have revealed that there is a discrepancy between students' expectation and their actual experience in an HEI (Brandsma-Dieters, 2013). This gap between expectations and reality can be both social and academic (Tinto, 1993). Academic incongruence can be caused either by too high or too low academic demands, leaving some students to have difficulties adjusting themselves to the program demands while others remain unchallenged. This situation will result in students from both groups to quit the program (Braxton, Vesper & Hossler, 1995; Tinto, 1993).

- **Social environment:** According to Thomas (2002) and Tinto (1993) previous studies have shown that engagement and inclusion are determining factors in increasing students' retention. Zepke and Leach (2010) argued that students from diverse background should feel welcomed by the institutional culture. There are many factors that affect institutional culture such as: the heterogeneity of students and staff, as well as autonomy given to students on their learning process (Brandsma-Dieters, 2013). An HEI is perceived to be more welcoming to students from different backgrounds when the population of people studying and working in the institute is more heterogeneous compared to other institutes (Zepke & Leach, 2010). There are other factors causing unhappiness in the social environment such as accommodation problems, dissatisfaction of the institute location, homesickness and difficulties in making friends (Yorke, 1999). Therefore, in addition to the formal support offered by staff, the informal support by family members and friends likewise plays an important role in student's decision to persist or to quit (Glogowska, et al., 2007).
- **Institutional factors:** Institutional support that includes emotional, social and academic support from staff and providing students with physical facilities such as: a library, databases and computers is considered as an important factor in student retention (Brandsma-Dieters, 2013). The interaction between students and staff is an important factor in enhancing social and academic integration of students (Braxton & Hirsch, 2004).
- **Financial consideration:** Financial burden is identified as one of the main reasons that cause students to quit their study program (Yorke, 1999). Studies have also shown that an increase in tuition fee makes it difficult for working students to balance between their study and their employment since they have to work more hours to afford tuition fee (Peng & Ling, 2010).

All the above mentioned factors influence student's persistence in the study program. The results of observation show that the wrong choice of program and high demands of the program are the main causes of students dropping out of the HEIs, in this study.

#### 5.1.3. The falling number of enrollment

Another key factor causing budget deficit in HEIs is the falling number of enrollment. One of the main reasons of low enrollment rate is Europe's aging population and low fertility rate in EU region (Marek, 2014). Still there is an opportunity that non-European immigrants would increase the number of enrollment; however it could take years before this change can be observed. Furthermore, immigrants seeking higher education in the Netherlands search for high quality education and enrollment in top ranking HEIs. A survey conducted by Hobsons, a student recruitment consultancy, shows that 30% of international students are less likely to choose Britain as a study destination and 6% will definitely not apply for study programs in UK universities as a result of the EU referendum (Ali, 2016). Therefore, in the wake of Brexit international students who wish to pursue higher education in Europe put their focus on other Western European countries including the Netherlands. This will raise the opportunity of increase in students' enrollment in international HEIs in the Netherlands in near future. Therefore, the environment is highly competitive and the HEIs are focused on creating their own special identity and increasing brand awareness.

### 5.2. The main effects of budget deficit on knowledge management activities

#### 5.2.1. Increasing workload of teachers

The results of the interviews show that budget deficit also leads to increased workload for teachers. One of the participants pointed out that "the student-lecturer ratio is 25 to 1, and the lecturer-supporting staff ratio is 3 to 1. It leads to a domino effect: if the budget drops while the number of students drop, it will lead to a decrease in hiring or an increase in firing." He later added that firing decisions are often related to insufficient academic credentials. However, a decrease in recruitment would result in higher workload for current faculty. One member of the faculty shared her experience: "There is a huge workload that teachers have in here. From my own experience, after one semester, I look awful. Several times I have worked until I am on the edge of a burn-out, just because I have to run from this class to that class. I have no time to refresh myself after all that. Then I go back home and don't even want to take off my make-up but just crash to sleep." This increased workload on staff members will negatively affect the quality of teaching on a long term basis if effective strategies are not applied. Observations show that many faculty members are concerned with the quality of their work considering the increased workload that they experience. In hours allocation for faculty one hour preparation is considered for

one hour lesson although in reality for delivering a high quality lecture many teachers have to spend more hours for preparation and even use their free time. Therefore, higher education managers are constantly seeking strategies to effectively solve the workload issue and provide students with high quality education.

#### 5.2.2. Decrease in knowledge dissemination through publications

Considering the fact that some faculty members engage in conducting research and publications in addition to their teaching tasks; the increased workload results in time constraints for effective documentation and publication of the generated knowledge. Knowledge creation and dissemination is one of the most important phases in KM processes in HEIs as learning organizations. Nowadays many university researchers are also involved in teaching activities and when HEIs face financial crisis or budget deficit they will have to allocate more teaching hours for their researchers which will lead to increased workload for them too. The distribution of work for researchers who teach and are required to publish their studies is a matter of concern for many HEIs. One of the participants in the study said: "I have wanted to finish my paper for ages and send it for review but I don't have the time; preparing lectures, exams, grading, administrative activities and lots of meetings make it difficult for me to concentrate and finalize my research and in the meantime I would also like some time to myself." A question that comes to mind is: how will university researchers' work be evaluated? Do HEI managers evaluate a researcher-teacher based on his/her publications or teaching qualifications (module evaluation), or both? It is obvious that based on the written contract if more weight is given to research, then the performance evaluation will be conducted accordingly. Therefore, HEIs need to find ways to provide researchers-teachers with more time and flexibility to increase publications and enhance knowledge dissemination.

#### 5.2.3. The impact of budget deficit on problem solving activities

HEIs are dealing with many challenges every day and to be able to stay competitive in the constantly changing environment they have to evaluate their performance on a regular basis and make the necessary changes. Universities are learning organizations that play key roles in national economic and social developments. Every year there are dozens of global forums and international workshops that bring together academics and practitioners to discuss current global issues and present practical solutions. Participation in these events provides academics with learning opportunities that can be transferred to their institute as well as communities. However, due to the high registration fees required for these events and financial problems that HEIs are suffering from, these opportunities for academics are limited.

Universities as socially responsible organizations should be able to control their impact on the economy, society and environment. Nowadays, the wave of refugees flooding into Europe and their economic impact on the EU countries has become a matter of concern. Long-term economic impact of refugees' inflow depends on how the integration of refugees in the labor market will take place. Successful integration of refugees into the host country's labor market is highly dependent on the education that they receive and HEIs play an important role in this matter. Still it should not be forgotten that providing asylum seekers with high quality education needs considerable planning and budget.

One of the main concerns of international universities is attracting talented students from all over the world. To achieve this objective, HEIs should focus on continuous improvement of their marketing activities. Recent trends show that HEIs are paying more attention to branding and marketing activities. Some institutes recruit marketing professionals from the corporate world and invest considerable time and money to create strong institutional brands (Hanover Research, 2014).

When the student enrollment rate increases HEIs should be able to provide them with adequate facilities, sufficient social and emotional support. High enrolment rate would result in the institution's need for more classrooms/ teachers available or teachers facing high number of students in one classroom which can negatively affect the quality of the learning process.

As mentioned before, there are many challenges that universities face in their daily operation and lack of sufficient budget can cause barriers to implementation of effective strategic plans by HEIs in a timely manner. Still, observations conducted in this study show that there are practical solutions that can smooth the adverse impact of budget deficit and increase HEIs productivity. All the participants in the interview generally agreed that HEIs can survive financial hardships with accurate and thoughtful planning.

Figure 3 shows the effects of budget deficit on KM activities in HEIs.

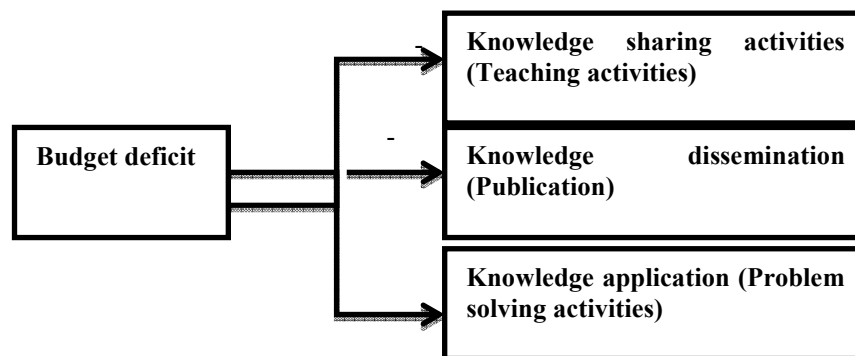


Figure 3. The effects of budget deficit on KM activities in HEIs

## 6. Conclusion and recommendations

HEIs are learning organizations and the center of KM activities. Nowadays, universities face many challenges in the implementation of KMS and budget deficit is one key factor that causes adverse impact on KM processes. This study was conducted in two international universities in the Netherlands, one of which belongs to the category of research universities and the other one is a university of applied sciences. The findings of this study showed that budget deficit negatively affect KM activities including teaching activities, research activities, decision making and problem solving activities. However, observations showed that effective strategic planning by HEIs can reduce the adverse impact of budget deficit and even enhance university productivity. Some of the initial themes that emerged from the cases are considered as practical solutions to be applied by HEIs:

- 1. Focus on Student centered learning:** Student-centered learning (SCL) refers to methods of teaching that provides students with opportunities to learn independently and from each other. In this method students are placed in the center of the learning process and the teacher coach them on how they can improve required skills and competencies (Collins & O'Brien, 2003). The results of observation for this study show that knowledge sharing activities can be improved when students are considered to be responsible for their own learning and achievement. While this approach leads to higher students' motivation and engagement it also significantly reduces lectures workload and stress. By using the SCL approach, teachers would need less time for preparation as the focus will be on coaching students instead of teaching them. To implement this approach in an effective way, it is advisable that HEIs provide teachers with larger classrooms for each lesson in which a higher number of students can attend, a short tutorial to be delivered and more digital learning tools can be used both inside and outside of the classroom. Moreover, providing students with digital learning environments such as Massive Open Online Courses (MOOCs) will give them the opportunity to receive more information in a shorter time than lectures given in the classroom. Applying blended learning approach in HEIs not only improves higher education productivity but also results in decreasing faculty workload and can free up time for scholarly activities.
- 2. Using online grading systems:** Formative assessment of students and grading their assignments is one of the most time consuming tasks of teachers. However, using digital environments like Graderwork can significantly reduce the time spent on assessment and grading students' homework or assignments. A digital environment like Graderwork is an environment to which students can upload their assignments, and it gives teachers the opportunity to insert their comments in the students' document without the necessity of downloading and saving the documents. Teachers' comments will automatically be saved and when the teachers push the button "release", students can view the comments and grades.
- 3. Focus on decentralized assessment:** HEIs all around the world generally use centralized assessment as the main way of evaluation of students learning outcomes. Centralized assessment usually takes place at the end of academic semester or block which will cause extra workload for teachers in that period of time since after correcting and grading exam papers, exam review sessions should also be scheduled with students to provide them with the opportunity of reviewing their papers and learning about the mistakes they made in the exam. This process will cause an unbalanced workload distribution for teachers while the outcome of centralized assessment can be biased most of the time. Observation shows that sometimes students who have achieved intended learning objectives through the academic block or semester do not succeed in the centralized exam due to illness or many other personal circumstances. This study suggests HEIs' managers to shift

their focus from centralized assessment to decentralized examination system where students learning outcomes can be assessed several times during the semester. Decentralized assessment of students' performance will result in a more balanced workload distribution for teachers through the academic year and improve students' productivity as well since they have the opportunity to improve their learning outcomes during the course.

- 4. Establishing a joint venture with another reputable HEI:** With the advent of globalization, HEIs as learning organizations are seeking ways to enhance their global reputations. To achieve this objective, higher education institutes should not only improve their knowledge productivity but also application of the generated knowledge in problem solving processes. Establishment of an international joint venture with another reputable university can facilitate achievement of this goal. This partnership will result in increasing brand awareness and attracting more international students, increased revenue, conducting joint research and simplifying problem solving activities.

In this study some rich themes and findings have emerged with regards to the effects of budget deficit on the implementation of knowledge management within HEIs and the factors that can improve the situation. Findings of this research are applicable to other HEIs and can facilitate the implementation of KMS within these learning organizations. Further research is required to learn more about the factors that can enhance financial performance of HEIs and increase knowledge productivity of these organizations.

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