TALENT MANAGEMENT OF ACADEMICS: A SYSTEMATIC LITERATURE REVIEW AND IMPLICATIONS FOR FURTHER RESEARCH IN HUNGARY

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Abstract

Talent management (TM) has become a key business issue recently, while finding and keeping talents are also crucial in higher education (HE). However, no study summarizes the knowledge on TM of academics. Hence, we conducted a comprehensive systematic literature review searching for existing knowledge about and common processes of TM in HE, and the specialties of TM of academics. We searched for all publications on TM related to academia in Web of Science and Scopus. Non-English and non-article items were excluded resulting in 68 and 108 items, respectively. Eventually, 26 articles were found relevant for a deeper analysis. Besides descriptive statistical analyses, we reviewed the articles in light of our suggested new process-based TM model, which is based on Gagné's work. Findings advance the field by enhancing its theoretical bases, summarizing current knowledge, and posing important questions for future research, while also offering a model as an underlying structure.

Keywords: talent management, human resource management, literature review, academics, higher education, universities

INTRODUCTION

During the past two decades, talent management (TM) has become a key management issue as human resources management (HRM) activities scoping the talented employees are playing a crucial role in the successful operation of organizations (Bethke-Langenegger, Mahler, & Staffelbach, 2011; Bhattacharya, Sen, & Korschun, 2008; McCracken, Currie, & Harrison, 2016). Several studies found that finding and keeping talented people is the "single most important managerial preoccupation for this decade" (Thunnissen et al., 2013, p. 1744) and these authors also expect that the growing competition for talent will have major effects on organizations. Furthermore, TM "highlights the unequivocal value of talent as a competitive weapon" (Mellahi & Collings, 2010, p. 143) and in our ever-changing

environment there is a growing need for such a weapon in order to gain some kind of a competitive advantage and keep it for as long as possible.

However, the significance of attracting and retaining talented employees is not only vital, but also poses huge challenges on organizations (Cappelli, 2008; Farndale, Scullion, & Sparrow, 2010; Schuler, Jackson, & Tarique, 2011) and only a very small proportion of corporations (5%) consider their TM activities to be very effective (CIPD, 2015, p. 21). In addition, some recent studies have highlighted the need for the integrated handling of knowledge management (KM) and TM, using the term 'smart talent management' (e.g., Vance & Vaiman, 2008; Whelan & Carcary, 2011).

In the era of globalization, the quest for talented people is not any less true for institutions of higher education (HE) than for any other (business) organization. As Singh and Singh (2015, p. 751) put it, "it is not only industries these days but educational institutes as well who are keen in maintaining key performers". This notion is also supported by the growing number of publications that examine TM in various HE settings. There is no publication at all on TM in HE in the Web of Science (WoS) and Scopus databases before 2010. Between 2010 and 2015 12 articles, while in the next three years (2016-2018) 14 articles were published in the WoS and Scopus databases.

In addition, HE institutions are seen to be part of knowledge networks, should act as agents of knowledge transfer and consequently foster creativity and also innovation. Furthermore, "attracting and retaining quality faculty is very important to educational institutions as a low faculty retention rate might create both monetary and academic consequences" (Rensselaer Polytechnic Institute, 2012). (cp. van den Brink, Fruytier, & Thunnissen, 2013) And it has to be acknowledged that knowledge workers are incredibly mobile today and if they are not feeling fulfilled or come across better opportunities, they just go elsewhere (O'Bryan & Casey, 2017). In the meantime, the composition and quality of academic stuff is an essential component of the quality of education and research as well as the reputation and competitive position of HE institutions. (van den Brink et al., 2013)

However, we could not find any studies summarizing already existing knowledge regarding TM of academics. Furthermore, TM literature is frequently criticized for lacking sound theoretical bases (Collings & Mellahi, 2009; Dries, 2013; Gallardo-Gallardo & Thunnissen, 2016; Iles, Chuai, & Preece, 2010; Thunnissen et al., 2013). Hence, the purpose

of this study is to present the results of a comprehensive systematic literature review on TM of academics.

The following research questions (RQs) were the starting points of the research presented in this paper.

RQ1: What can be observed regarding TM and TM processes in HE (based on the literature available in Web of Science (WoS) and Scopus)?

RQ2: Are there any special characteristics of TM of academics?

RQ3: What are the most common TM processes and/or practices in academic institutions?

The article is structured as follows. The next section briefly reviews relevant literature on TM; followed by the methods employed in our study. We, then, present the results of our qualitative data analysis. The subsequent section is dedicated to our key findings and conclusions, while future research questions and a summary makes the study complete.

THEORETICAL BACKGROUND

What is talent?

The concepts of talent and TM are interrelated, at first, we briefly review the former. There are several different definitions and tensions of talent available in the literature (e.g., Dries, 2013). One of these talent tensions is the inclusive-exclusive approach, which is essential regarding the main topic of this work, namely TM. According to the inclusive approach (e.g., Silzer & Dowell, 2009, p. 14), all employees are talented (in somewhat), or as Lewis and Heckman (2006, p. 141) put it: "'talent' is essentially a euphemism for 'people'". Meanwhile, the exclusive approach differentiates the employees (Gallardo-Gallardo, Dries, & González-Cruz, 2013). In current HRM practice, talent interpretations tend to follow this exclusive approach (e.g., Gallardo-Gallardo & Thunnissen, 2016), and they most often contain superior skills, commitment and above average performance—similarly to Renzulli's influential conceptualization.

According to Joseph S. Renzulli's (1978, 2011, 2016) Three-Ring Conception of Giftedness, which is one of the most seminal scientific talent definitions despite originating from an educational context, talent is in the section of 'above average abilities' (both general abilities (e.g., general intelligence) and specific abilities (e.g., the capacity to acquire

knowledge of a given field)); high level of 'creativity' (all the traits that belong to the general heading of creativity (e.g., potential of creative accomplishments, originality of thinking); and high level of 'task commitment' (endurance, perseverance, hard work, etc.)—all of which are equally important.

However, many authors follow the exclusive approach. For instance, according to Michaels III, Handfield-Jones, and Axelrod (2001, p. xii): talent is "the sum of a person's abilities—his or her intrinsic gifts, skills, knowledge, experience, intelligence, judgment, attitude, character and drive. It also includes his or her ability to learn and grow."

According to Ulrich and Smallwood (2012, p. 60): "Talent = competence × commitment × contribution" where competence refers to knowledge, skills and values required for todays' and tomorrows' job; right skills, right place, right job, right time, commitment means willing to do the job, and contribution is finding meaning and purpose in their job.

Renzulli's original model (1978) did not contain any external factors (and their effects), however, its latest update refers to the model's "Houndstooth background" as a representation of the "interaction between personality and environmental factors that give rise to the three rings" (Renzulli, 2016, p. 67). Since then, many complex talent structures with external factors have been developed, for instance, in Gagné's (1995, 2004, 2009a, 2009b, 2010a, 2010b) model. Even though in the original version of the Differentiated Model of Giftedness and Talent (DMGT), milieu, persons, provisions, and events are mentioned as external factors, while the updated DMGT 2.0 version contains only the first three of them.

Gagné's (2010b) model is also important because it builds on the distinction between two important concepts: gifts (outstanding natural abilities) and talents (outstanding knowledge and skills). Natural abilities (gifts) can be transformed into various competencies (talents) through the developmental process, while "two types of catalysts, intrapersonal and environmental, actively moderate" this process. (Gagné, 2010b)

What is TM?

There is still a debate about the exact meaning of TM in the literature, and there is no single, universally accepted definition or model of TM; however, several well-defined approaches

can be distinguished (Iles, Chuai, and Preece, 2010; Lewis & Heckman, 2006; Mellahi & Collings, 2010). Hereby we only briefly discuss the most influential ones.

One of the most cited sources in TM literature is Lewis and Heckman's (2006, p. 140) work. Referring to several other researchers' works, they identified "three distinct strains of thought regarding TM": The first of which defines TM as a collection of HRM practices, functions, activities such as recruiting, selection or development. The second focuses primarily on the concept of talent pools, while the third "focuses on talent generically; that is, without regard for organizational boundaries or specific positions". Within this perspective there are further two views. One regards talent "(which typically means high performing and high potential talent) as an unqualified good and a resource to be managed primarily according to performance levels." (cf. "A", "B", and "C" players by Michaels, Handfield-Jones, and Axelrod (2001)) The second perspective regards talent as "an undifferentiated good and emerges from both the humanistic and demographic perspectives."

Collings and Mellahi (2009) refer to the three streams identified by Lewis and Heckman's (2006) work; although, they omitted the second perspective of the third strand and only mention its exclusive side also noting that this approach alone is not beneficial. In addition to these three streams, Collings and Mellahi (2009) added a fourth one, "which emphasises the identification of key positions which have the potential to differentially impact the competitive advantage of the firm (Boudreau & Ramstad, 2005; Huselid et al., 2005). The starting point here is identification of key positions rather than talented individuals per se." Their later work (Mellahi & Collings, 2010) also refer to the same four dimensions.

Another often cited source is Iles et al.'s (2010) work – they also distinguished three "three broad strands of thought regarding TM", noting that "Lewis & Heckman, 2006 present a related, but somewhat different analysis": "(1) TM is not essentially different from HRM; (…) (2) TM is integrated HRM with a selective focus; (…) (3) TM is organizationally focussed competence development through managing flows of talent through the organization; the focus here is on talent pipelines rather than talent pools."

Additionally, Iles et al. (2010) distinguished so-called perspectives on TM, naming one axis of their four-quadrant model "exclusive versus inclusive people focus", while the other "focus upon organizational positions as against the people themselves".

In our holistic viewpoint, TM should include certain processes to ensure the development of talents with natural abilities (gifts) into high performer, talented employees.

The concepts of 'academia' and 'academics'

Due to their significance regarding this research, the meaning of academia and academics needs to be discussed as well.

Determining the meaning of academics is not so straightforward. In the literature, there are several different expressions about the personnel in academia, for example, academic workforce, academic scholars, faculty staff or members or personnel, teaching and researching staff, support staff, lecturers, researchers, university staff. It is quite surprising that such a fundamental and well-known book like The International Encyclopedia of Higher Education (Knowles, 1978) does not contain academic or academia as headwords. The description of other items may provide some information indirectly, for example, the detailed explanation of Academic Tenure mentions teaching careers and career teachers (Knowles, 1978, p. 49).

In our viewpoint, all employees of a higher educational organization are members of the category of 'academics'. We use academia and HE interchangeably, meaning that academia covers all aspects of HE.

DATA AND METHODS

With the aim of conducting a comprehensive review, we searched for publications in the complete WoS and Scopus databases. Our search string was: ("talent management" AND (adacemi* OR "higher education" OR universit*))[13] in the topic field (containing the Title, Abstract, Author Keywords, and Keywords Plus®) in WoS and in the Article title, Abstract, Keywords fields in Scopus with no restrictive conditions on the date of publication. Non-English and non-article items (except for review articles) were excluded, which resulted in 68 (WoS) + 108 (Scopus) items. Data collection was closed on September 30, 2018.

Due to the overlapping of the two databases, eventually 124 articles remained for review. Out of these, a manually conducted filtering process identified that only 26 articles were

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[13] The quotation marks refer to joint occurrence of the given words, and the asterisk refers to all the possible endings of that word.

actually relevant for analysis based on their contents as many of them covered topics other than TM related to academic personnel. Thus, we analyzed 26 articles in detail.

RESULTS

Interpretations of 'academics' throughout the examined sources

The first problem we encountered when wanting to conduct this research was regarding the operationalization of 'academics'. Some of the examined sources (e.g., van Balen, van Arensbergen, van Der Weijden, & van Den Besselaar, 2012; van den Brink et al., 2013) refer to teaching and research staff as academics, some (e.g., Barginere, Franco, & Wallace, 2013; Oppong & Oduro-Asabere, 2018) include university support staff as well, while others (e.g., Erasmus, Naidoo, & Joubert, 2017; O'Bryan & Casey, 2017) do not really specify what they mean when they speak about, for instance, "all university staff" (Lim & Boey, 2013) or "faculty members" (Eghbal, Hoveida, Seyadat Seyedali, Samavatiyan, & Yarmokhammadian, 2017). Fig. 1 summarizes these theoretical possibilities: either all or some of those who perform teaching, research, and support tasks (e.g., librarians) could be taken as academics at a given HE institution. Such operationalizations depend on how given researchers see such matters as well on the specificities of the institutional system of HE, which may vary from country to country.

Figure 1 Types of activities potentially defining how the concept of academics is operationalized
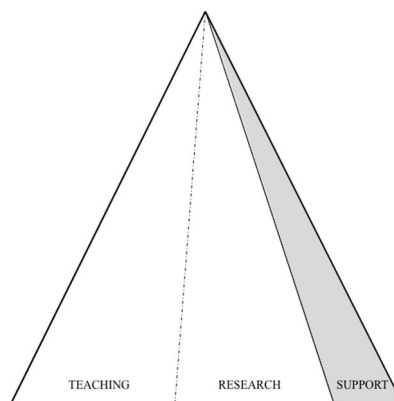

Figure 1 only means to indicate that these different types of activities and HE staff can co-exist and together they can be labelled "all university staff". And also any subsection of

Figure 1 can also be referred to as HE staff or academics. As the purpose of this article was to review the literature, here we would only want to emphasize that such differences exist.

Fig. 2 presents the results of our analysis regarding the conceptualizations of academics across the 26 examined articles. The circled numbers refer to the article numbers as shown in the first column in Tab. 1 (e.g., "1" in Fig. 2 refers to Badia (2015) and so on). As shown in Fig. 2a), there is a group of the analyzed articles that discuss only teaching and research staff related issues together, without more distinctions on employees. Others focused on or included support staff separately, while in one case teaching staff was mentioned solely (Fig. 2b). 5 articles did not specify any further the employees than, for example, "university staff" (Fig. 2c).

Figure 2 Results of the analysis of how the concept of academics is operationalized in the examined 26 articles
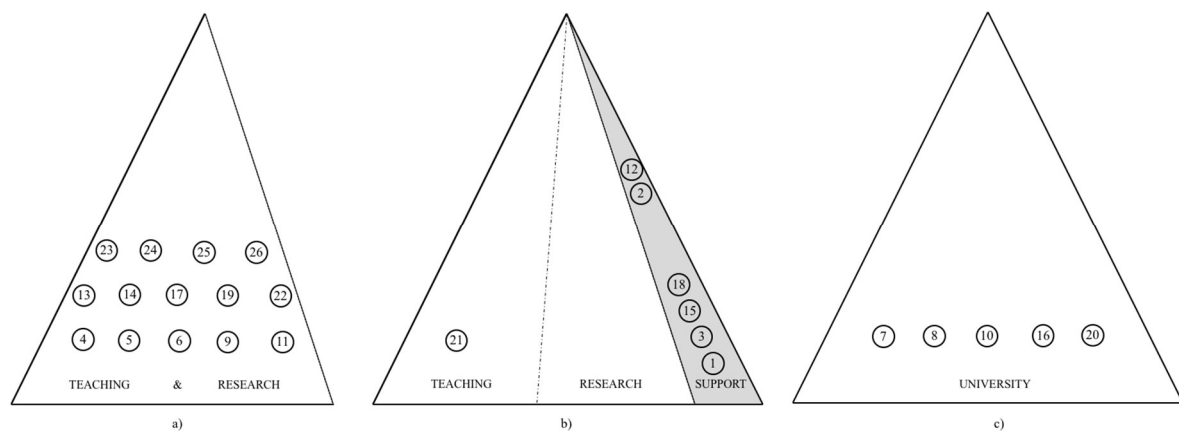
Tab. 1 summarizes some of the findings of our review. Here we would like to highlight that in line with the variedness of the operationalization of the concept of academics, the areas of study of the examined articles are also diversified ranging from academia through academic libraries and HE to medical schools.

Table 1 Summary of the literature review on TM of Academics

	Author(s)	TM		Main topic / concept / problem	Area (as it occurs in the text)	Specific subjects of focus (as it occurs in the text)	Country	University/ organization	Methodology						Data / Sources	
		In focus	Mar-ginal						Conceptual			Empirical			Secon-dary	Pri-mary
									Review / Commentary	Theory Building	Model / Framework	Case Study	Survey / Ques.	Other qual. (e.g., interview)		
1.	Badia (2015)		x	Leadership of librarians	Academic libraries	Academic library staff members	Canada	McGill University Library, Schulich Library of Science & Engineering, SLA's Engineering Division	x			x			x	x
2.	Barginere et al. (2013)		x	Succession Planning, Leadership	Nursing	Nursing leadership team	USA	Rush University Medical Center			x	x			x	x
3.	Barkhuizen, Mogwere, & Schutte (2014)	x		TM and work engagement, service quality orientation	Higher education	Support staff	South Africa	1 South African higher education institution					N=60		x	x
4.	Barkhuizen, Roodt, & Schutte (2014)	x		TM: job demands vs job resources	Higher education	Skilled and competent academic workforce	South Africa	South African higher education institutions					N=146		x	x
5.	Bradley (2016)	x		TM for universities	HE sector	Academic staff (teaching and research roles)	Australia	-	x						x	-
6.	Eghbal et al. (2017)	x		TM, research performance, organizational justice	Universities	Faculty members	Iran	3 Iranian universities: University of Isfahan (UI), Isfahan University of Medical Sciences (IUMS) and the Isfahan University of Technology (IUT)			x		N=130		x	x

Table 1 (continued)

No.	Author			Topic	Context	Population	Country	Institution					N		
7.	Erasmus et al. (2017)	x		TM practices, implementation	(Online) Academic context	Senior line managers (2 academics + 9 support staff)	South Africa	University of South Africa (Unisa)						N=11	x	x
8.	Lim & Boey (2013)		x	Institutional management of 1 university	University	All university staff	Singapore	Nanyang Technological University (NTU)			x				x	x
9.	Mohan, Muthaly, & Annakis (2015)	x		TM: Talent development	Universities	Academics from 3 GLCs Universities	Malaysia	3 Malaysian Government Linked Companies (GLCs) Universities: Universiti Tenaga Malaysia (UNITEN), Universiti Teknologi Petronas (UTP), Multimedia University of Malaysia (MMU)		x			N=168		x	x
10.	O'Bryan & Casey (2017)	x		TM: Hiring and Developing Engaged Employees	Higher education and libraries	Knowledge workers of HE and libraries	USA	-		x					x	-
11.	Oludayo, Akanbi, Obot, Popoola, & Atayero (2018)	x		TM: Talent retention	University	Academic staff of Covenant University	Nigeria	Covenant University					N=152		x	x
12.	Oppong & Oduro-Asabere (2018)	x		TM: Succession planning, directorship roles, identification	University	Non-academic senior members of directorship roles	Ghana	1 Ghanaian university: University of Cape Coast (UCC)						N=9	x	x
13.	Paisey & Paisey (2018)	x		TM: recruitment, in academia in accounting	University	Accounting academics	Scotland, Republic of Ireland	9 universities in Scotland, and 5 in the Republic of Ireland						N=14	x	x

Table 1 (continued)

14.	Palmer, Hoffmann-Longtin, Walvoord, Bogdewic, & Dankoski (2015)		x	Competency management	Academic health center	Department chairs of Academic health centers	USA	Indiana University School of Medicine				x			x	x
15.	Peet, Walsh, Sober, & Rawak (2010)	x		TM: Knowledge transfer, Generative Knowledge Interviewing, Leadership development	University	A small group of fund-raising leaders and experts at University of Michigan	USA	University of Michigan						N=7	x	x
16.	Rastgoo (2016)	x		TM and organizational development, job motivation	University	All employees in educational, research, student, and cultural deputies of Bushehr University	Iran	Bushehr University			x		N=170		x	x
17.	Rayburn, Grigsby, & Brubaker (2016)		x	Succession planning for department chairs	Medical schools	Department chairs of medical schools	USA	US medical schools	x						x	x
18.	Rutledge, LeMire, Hawks, & Mowdood (2016)	x		TM: Competency-based TM	Academic library	Library employees	USA	1 academic library: University of Utah's J. Willard Marriott Library				x			x	x
19.	Saddozai, Hui, Akram, Khan, & Memon (2017)	x		TM practices, implementation	Academia	Academic staff at government owned universities of China and Pakistan	China, Pakistan	5 Chinese and 5 Pakistani government owned universities						N=260	x	x
20.	Salau et al. (2018)	x		TM practices in 1 university	University	Academic staff (teaching and non-teaching employees working there for min 2 years) in a technology-driven private university	Nigeria	Covenant University			x		N=313		x	x

Table 1 (continued)

No.	Author			TM focus	Sector	Subject	Country	Context						N	N		
21.	Singh & Singh (2015)	x		TM: Talent quotient for Indian management teachers	Higher education	Management teachers in India	India	26 Indian management colleges/ management department/ business schools						N=15+205		x	x
22.	Thunnissen (2016)	x		TM practices in universities	Universities	Academic staff	Netherlands	Dutch publicly funded universities, 5 departments						N=48	N=110+60	x	x
23.	Thunnissen & Van Arensbergen (2015)	x		TM: Definition of academic talent, multi-dimensional approach to talent	Higher education	Academics	Netherlands	5 Dutch universities 1-1 departments			x				N=100+29	x	x
24.	van Balen et al. (2012)	x		TM: Career management	Higher education	Academics, academic scholars	Netherlands	Dutch universities				x		N=42		x	x
25.	van den Brink et al. (2013)	x		TM: Definition of academic talent, Performance management	Higher education	Junior and senior academic talents	Netherlands	7+5 Dutch universities				x			N=64+25+30	x	-
26.	van der Weijden, Teelken, de Boer, & Drost (2016)	x		TM: Career management	Higher education	Postdoctoral researchers	Netherlands	2 Dutch universities						N=225		x	x

TM of academics

A further issue we had to solve during the research process was the conceptualization of "TM of academics".

For the purposes of this article, our conceptualization for TM of academics is the following: articles that cover topics of (or are related to) TM in HE institutions regarding teaching, research and/or support staff. Consequently, articles exploring TM in other fields, for instance, HE graduates or schools were labelled irrelevant regarding our research questions and were not examined any further.

Analyzing the 26 articles, we found that in 21 publications (81%) TM was a central topic, while in 5 articles (19%) TM was only marginally concerned. These 5 articles focused primarily on such topics as leadership, succession planning, university management, and competency management. 23 (86%) of the examined articles contained empirical analyses covering various regions of the world from China, through Ghana to the Netherlands and the US. (For more details see Tab. 1.)

Regarding the conceptualization of TM, we found that only 14 (54%) of the examined articles contained some kind of definition of TM, but 20 articles (77%) mentioned TM processes at least. Tab. 2 presents the results of the collection of all the TM definitions and TM processes from the examined articles.

As shown in Tab. 2, we found that in the examined articles all the aforementioned well-known TM approaches are present.

Table 2 Summary of TM definitions and processes in the examined sources on TM of academics

	Author(s)	What is TM?	TM processes
1.	Badia (2015)	-	-
2.	Barginere et al. (2013)	Talent management is a comprehensive concept defined, at RUMC, as recruitment development, promotion and retention of people, planned, and executed in line with the organization's current and future business goals. (p. 68)	-
3.	Barkhuizen, Mogwere, & Schutte (2014)	Talent management can be defined as the implementation of integrated human resource strategies to attract, develop, retain and productively utilize employees with the required skills and abilities to meet current and future business needs (Kontoghiorges & Frangou, 2009). (p. 70)	attract, develop and retain talented employees (p. 69)
4.	Barkhuizen, Roodt, & Schutte (2014)	-	attract and retain quality staff members (p. 2037)

Table 2 (continued)

	Author(s)	What is TM?	TM processes
5.	Bradley (2016)	Lewis and Heckman (2006) and Collings and Mellahi (2009) develop frameworks for talent management that define it with explicit connections between talent and strategy and so view talent management as the 'architecture' required to develop and sustain competitive advantage. Specifically, they define talent management as an organisational system (or culture) that: 1. Identifies key positions that differentially contribute (add value) to the organisation's competitive advantage; 2. Develops a talent pool of high potential and/or high performing individuals to fill these positions; and 3. Develops human resource systems to facilitate the alignment of talented individuals, key positions and organisational strategy. (p. 14)	Recruitment, development, retainment and reward of academic talent TM's alignment with strategy, metrics, and management
6.	Eghbal et al. (2017)	Sweem [Sweem, 2009] believes that talent management is an intelligent approach to the attraction, development and retention of experts and the use of their talents and competencies to meet an organization's needs and achieve present and future goals. Talent management is a collection of designed processes that guarantee employees' proper placement at an organization. In other words, the right person will be in the right job at the right time. (p. 84)	A model designed by Peter Cheese, Robert Joseph Thomas, and Elizabeth Craig [Cheese et al., 2008] in this field includes five main components that indirectly cover other models (p. 84-85): Defining and identifying talent needs Discovering talent sources Attracting talents Developing the potential abilities of talents Strategically deploying talents Retaining talents Evaluating and optimizing talent management Eghbal et al. [Eghbal et al., 2016] developed a model entitled "the management of gifted personnel at talent- centered universities". The authors identified two components in this process: the attraction and retention of talent, and state that after the discovery of talent, the two aforementioned components are the most important aspects of talent management. (p. 85)
7.	Erasmus et al. (2017)	Managing talent within an organisation has been identified as the lever capable of facilitating the attraction, development, and retention of the required skills and knowledge within the organisation through sound strategy, practices, and interventions (Schiemann, 2014). (p. 84) Al, Cascio, and Paauwe (2014) conceptualise TM as "those activities and processes that enable identification of positions and talent pools that are critical to building and sustaining an organisation's competitive advantage" (p. 174) (p. 84) Cappelli and Keller (2014) describe TM as "the process through which organisations anticipate and meet the needs for talent in strategic jobs" (p. 307). (p.85) Stahl et al.'s (2012) claim that "TM specifically involves attracting, selecting, developing and retaining high potential employees" (p. 38) and should not include all employees of any given organisation. (p. 85)	attraction (talent sourcing), development, deployment, and retention (p. 94)
8.	Lim & Boey (2013)	-	-
9.	Mohan, Muthaly, & Annakis (2015)	There are three major conflicting perspectives on TM within the literature. The first perspective defines TM as a collection of human resource cycles and functions (Byham, 2001; Chowanec & Newstrom, 1991; Heinen & O'Neill, 2004; Hilton, 2000; Mercer, 2005; Olsen, 2000; Boudreau & Ramstad, 2005; Lewis & Heckman, 2006), the second focusses on the development of talent culture as a deliberation of succession planning (Jackson & Schuler, 1990; Rothwell, 1994; Kesler,2002; Pascal, 2004; Ingham, 2006) and the third focusses on generic talent structured along the lines of competency (Buckingham & Vosburgh, 2001; Walker & Larocco, 2002). (p. 50)	talent identification, talent culture, competencies and talent development three prerequisites for effective TM: recognising and identifying key talents, developing a talented workforce and, motivating and retaining a competent and talented workforce to readily move into strategic and significant roles, (p. 50)

Table 2 (continued)

|	Author(s)	What is TM?	TM processes
10.	O'Bryan & Casey (2017)	The scholarly literature identifies at least three distinct interpretations of talent management (TM). First, it is simply a new term for describing traditional HR practices. Traditional HR practices, similar to Schiemann's definition of talent, include identification of institutional need and the recruitment of employees, but fail to differentiate between "strategic roles within organizations over non-strategic ones." Secondly, TM can also refer to succession-planning practices. As Maltais writes, "One of the reasons companies invest in talent-management solutions is to make informed, data- driven workforce decisions and align talent with business objectives," which includes planning for the future as employees retire. … Because of the strategic nature of TM, these procedures need to "focus on hiring, developing, retaining, and engaging faculty, staff, and administrators who help the institution attain its goals." Last, TM should include the identification and management of talented employees currently in an organization's employ. Although early identification and engagement with employees is critical, this alone is not enough. The 2012 ASHE Higher Education Report article by Evans and Chun, lays out a "framework for strategic talent management in higher education with four focal areas of the employment experience for faculty and staff: (1) recruitment, outreach, and hiring; (2) affirmative action and diversity; (3) total rewards; and (4) employee engagement.15 It is no longer enough to just fill positions, staff classes and keep the lights on. "Talent acquisition through continuous sourcing, recruitment, and outreach processes is vital to institutional sustainability and organizational renewal in the public research university." Schachter echoes this in her advice to library managers to practice good hiring methods and effective performance management as well as budgeting annually for staff development programs, discovering what motivates staff, and engaging in retention and succession planning strategies. (p. 3-4) „Talent management is the way in which the talent lifecycle is managed." (p. 4)	Talent Lifecycle: "This ranges from building a talent brand that attracts the right talent to acquiring, onboarding, developing, managing, retaining and even recovering talent." (p. 4)
11.	Oludayo, Akanbi, Obot, Popoola, & Atayero (2018)	-	identifying, training and developing of talents (p. 700)
12.	Oppong & Oduro-Asabere (2018)	by Oppong (2015) talent management: a programme of identifying and developing potential employees for higher and/or critical positions) (p. 264)	-
13.	Paisey & Paisey (2018)	Scullion, Collings, and Caligiuri (2010, 106) define global talent management as including: all organizational activities for the purpose of attracting, selecting, developing, and retaining the best employees in the most strategic roles (those roles necessary to achieve organizational strategic priorities) on a global scale. (p. 3)	Talent management spans the employee lifecycle, from attracting and selecting employees to developing and retaining them (Scullion, Collings, and Caligiuri 2010; Stahl et al. 2012). (p. 1)
14.	Palmer, Hoffmann-Longtin, Walvoord, Bogdewic, & Dankoski (2015)	-	-
15.	Peet, Walsh, Sober, & Rawak (2010)	-	The Talent Management Team takes a holistic approach to recruiting, retention and training, which has more recently converged into the following areas: (1) creating a leadership pipeline for recruiting talented young people into the profession; (2) developing a culture of learning, knowledge-sharing and generation within OUD and the UM development community; and (3) identifying new programs to attract and retain great talent in the development community. (p. 74) Talent Management Cycle: Talent Acquisition, Talent Development, Talent Retention, and Talent Transition (p. 85)
16.	Rastgoo (2016)	Duttagupta (2005) believes that talent management originates from strategic management of talents flows in organization and its goal is to create an accessible source of talents for adapting the right individuals with the rights jobs and the right time based on the strategic purposes of business (Kaviani and Bahrami, 2013). (p. 654)	Dimensions of TM: Attraction of talents, Retaining talents, Management of talents, Identification and discovery of talents, Selecting and applying talents (Azari et al., 2014) (p. 654) Components of TM include attraction and recruitment of talented employees, identification and separation of talented employees, using talent, developing talent, creation and maintenance of positive relationships, and maintenance of talents. (p. 658)

Table 2 (continued)

	Author(s)	What is TM?	TM processes
17.	Rayburn, Grigsby, & Brubaker (2016)	-	-
18.	Rutledge, LeMire, Hawks, & Mowdood (2016)	Talent management is defined as "an integrated set of processes, programs, and cultural norms in an organization designed and implemented to attract, develop, deploy, and retain talent to achieve strategic objectives and meet future business needs" (Silzer & Dowell, 2010, p. 18). (p. 236)	Talent-management activities include "recruitment and hiring, retention, employee engagement, job classification management, compensation management, performance assessment, competencies, professional development planning, and succession planning" (Taylor & Lee, 2014, p. 9). (p. 236-237)
19.	Saddozai, Hui, Akram, Khan, & Memon (2017)	TM basically focuses on the individuals who are identified by the management as a potential talent on which the organization can invest on for the future (Collings and Mellahi 2009; Valverde et al., 2013, pp. 1833-1834). (p. 539) TM in an educational organization is basically development of professional skills in teachers and administrators … (Uzma, 2010) (p. 541) According to the general consensus the view about TM is that it's basically an effective tool for identifying, recruiting, developing, retaining and managing key employees identified as talents but in a very small scale. (p. 547) Majority of respondents identified TM as identifying, recruiting, developing and retaining talents. About 15 respondents defined TM as capability building for a team, individual and organization. (p. 547-548)	In order to attract the talent companies and organization employ TM concept in order to identify, hire, develop and retain talents (Hatum, 2010, p. 124). (p. 539)
20.	Salau et al. (2018)	-	talent attraction (recruitment); talent development (capacity building) and talent retention (p. 1041)
21.	Singh & Singh (2015)	Also, talent management refers to the sourcing (finding talent); screening (sorting of qualified and unqualified applicants); selection (assessment/testing, interviewing, reference/background checking, etc., of applicants); on-boarding (offer generation/ acceptance, budging/ security, payroll, facilities, etc); retention (measures to keep the talent that contributes to the success of the organisation); development (training, growth assignments, etc); deployment (optimal assignment of staff to project, lateral opportunities, promotion, etc) and renewal of the workforce with analysis and planning as the adhesive, over-arching ingredient (Schweyer, 2004; CIPD, 2006; Ehsan et al., 2014). (p. 753) In other words, talent management is what occurs at the nexus of the hiring, development and workforce management process and can be described alternatively as talent optimisation. It is managing the entire employee life cycle, leadership development, succession planning and so on (Delong and Trautman, 2010). (p. 753) Thus, talent management is all about formulating successful talent strategies (Sears, 2003). (p. 753) Thus, it is the systematic cycle of planning, execution, and evaluation to manage the flow of talent into, through, and out of the organisation to achieve goals and meet needs. (p. 753)	hunting, acquiring, developing and retaining best talent (p. 751) In a nutshell talent management rests on the four pillars; viz. recruitment management, performance management, learning management and compensation management. (p. 753)
22.	Thunnissen (2016)	TM is often described as the systematic attraction, identification, development, engagement/retention and deployment of talents (e.g. Scullion et al., 2010) (p. 58)	Selection and recruitment, and Development, performance and promotion practices (p. 65-66)
23.	Thunnissen & Van Arensbergen (2015)	-	identify, select and develop talent (p. 186) academic TM rests on two pillars: stimulating development of intellectual, academic abilities, in particular for the junior positions; and controlling and measuring performance, especially for the more experienced academics. (p. 192)
24.	van Balen et al. (2012)	-	'recruiting the best scholars' (p. 313) attract and to retain the best scholars (p. 327)
25.	van den Brink et al. (2013)	-	recruitment and selection (p. 180) attract and retain top talent (p. 180)
26.	van der Weijden, Teelken, de Boer, & Drost (2016)	-	-

The suggested TM model based on Gagné's DMGT 2.0 framework

Due to the lack of the consensus regarding the meaning of TM, we suggest that a special framework adapting the aforementioned Differentiated Model of Giftedness and Talent (DMGT) 2.0 by Gagné (2010b) should be implied.

Our suggested TM model (Fig. 3) is based on Gagné's process-based approach. We are also on the opinion that under certain circumstances (so-called catalysts) 'gifts' can be developed into 'talents', but our suggested TM model fundamentally differs from Gagné's regarding its focus and exact parts. While Gagné (2010b) focused on talents and their development (in an educational context), our model applies Gagné's process-based approach to TM (in general). Our suggested process-based TM model states that the subjects of TM processes are the so-called talent potentials (identified by their competencies), who can become the members of different talent segments through the process of successful attraction, selection, development, and retention. There are some external and internal catalysts (macro environmental and organizational factors, respectively) that may influence the process of the management of talents. We are on the opinion that this model can serve as a holistic theoretical base for examining the TM process in its entirety.

Figure 3 The suggested process-based TM model
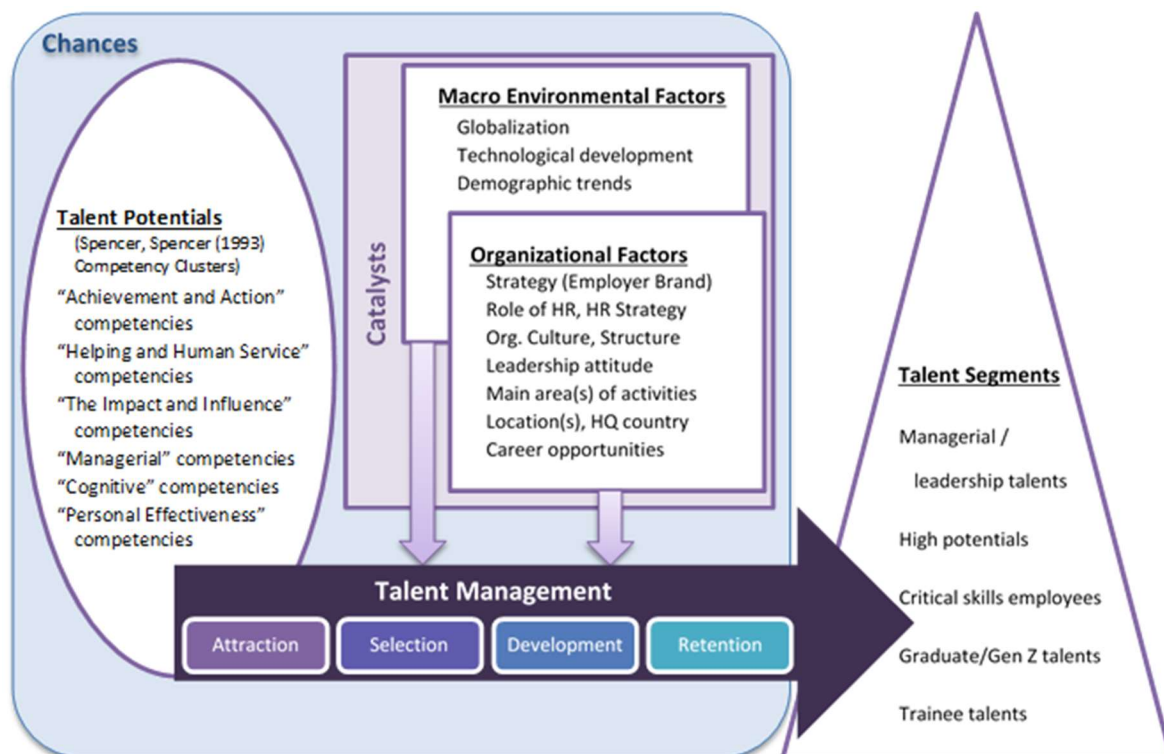
Source: Authors' own edit based on Gagné's (2010b) model

The upcoming four subsections detail our findings regarding each of the major components of the suggested model. The fact that all of the examined articles touches upon at least parts of the model further proves its added value in bringing findings together into a more holistic picture.

1. Talent Potentials

Talent potentials are in the starting point of our process-based TM model, as the subjects of TM activity, who should be identified according to their competencies in line with Spencer and Spencer's (1993) Competency Clusters: "Achievement and Action" competencies, "Helping and Human Service" competencies, "The Impact and Influence" competencies, "Managerial" competencies, "Cognitive" competencies, and "Personal Effectiveness" competencies. (Fig. 3) Depending on the given job, the required high-level competencies should be determined in order to select the employees to be labelled as talent potentials on the given field.

During the systematic literature review on TM in HE we found that several authors (Mohan et al., 2015; Peet et al., 2010; Rutledge et al., 2016) were concerned about competency management and/or certain competencies of talents, but they didn't define talents by their competencies.

Some other authors (Erasmus et al., 2017; Saddozai et al., 2017) were concerned about defining talents according to the talent tensions (inclusive versus developable). Only Thunnissen and Van Arensbergen (2015) focused on conceptualizing academic talents, while Singh and Singh (2015) wrote about a specific measurement (the so-called Teacher's Talent Quotient) in order to define talent of management teachers.

2. Talent Management Processes

In our process-based approach of TM (Fig. 3), we distinguish four TM processes: attraction, selection, development, and retention of talents. Attraction encompasses drawing the potential talented employees' attention to the opened positions and getting them to apply for the given job, that is, recruitment. Selection means finding the best from all the talented applicants. Development provides the necessary training and development for talents – including new hires and those who has already been working there for a while, too. Retention aims to support the employment of talents as long as possible.

The examined articles showed several different viewpoints on TM processes and practices, as is shown in the last column in Tab. 3. There were some articles focusing on certain TM processes, for instance, Paisey and Paisey (2018) on recruitment, van den Brink et al. (2013)

on talent recruitment and selection, O'Bryan and Casey (2017) on hiring and development, Oludayo et al. (2018) on retention, and van der Weijden et al. (2016) on career management. Furthermore, O'Bryan and Casey (2017) and Peet et al. (2010) wrote about the entire TM activity mentioning Talent Lifecycle (consisting of 4 TM processes) and Talent Management Cycle (consisting of 8 TM processes), respectively.

The examined 26 articles significantly differ in their interpretation of TM processes. Barkhuizen, Roodt, and Schutte (2014), Oludayo et al. (2018), and Thunnissen (2016) mentioned only two TM processes; while Barkhuizen, Mogwere, and Schutte (2014), Salau et al. (2018), Thunnissen and Van Arensbergen (2015), and van Balen, et al. (2012) proposed three of them. Most of the articles distinguished four TM processes (Bradley, 2016; Erasmus et al., 2017; Mohan et al., 2015; Peet et al., 2010; Saddozai et al., 2017; Singh & Singh, 2015; van den Brink et al., 2013). Furthermore, some authors mentioned even more (6-9) TM processes (Eghbal et al., 2017; O'Bryan & Casey, 2017; Rastgoo, 2016; Rutledge et al., 2016). (Tab. 3)

3. Talent Segments

In our TM model, we differentiate several segments of talents according to their specific characteristics and varying needs regarding TM processes and practices: managerial/leadership talents, high potentials, critical skill employees, graduate/Gen Z talents, and trainee talents. (Fig. 3)

Managerial/leadership talents refer to managed talent potentials in managerial positions, while high potentials refer to those talent potentials who are expected to fulfill a managerial position in the future. Critical skill employees possess unique skills, capabilities, competencies or knowledge. Graduate/Gen Z talents are trainee talents who are members of the young generations with no/less experience in the given field. High potentials, graduate/Gen Z talents and trainee talents can be labelled as junior talents.

Our review on TM in HE summarized the different conceptualizations and types of talents. Regarding the conceptualization of talent, we found that almost all (25; 96%) of examined articles contained some kind of conceptualization of talent. (Tab. 3)

As shown in Tab. 3, most of the articles mentioned managerial/leadership talents only (Badia, 2015; O'Bryan & Casey, 2017; Palmer et al., 2015; Rayburn et al., 2016), while others contained both managerial talents and high potentials (Barginere et al., 2013; Oppong & Oduro-Asabere, 2018), or managerial talents and intern talents (Peet et al., 2010). Van Balen et al. (2012) focused on high potentials only. In Tab. 3, the last column contains our classification of

the talent segments according to our suggested model, while the original occurrences of the relevant expressions are highlighted in grey in the neighboring column.

Some articles mentioned specifically academic talents, and differentiated them according to two aspects: their main tasks – teaching versus research versus support talents (Bradley, 2016; Salau et al., 2018; Thunnissen, 2016; van der Weijden et al., 2016), and their seniority – senior versus junior talents (Lim & Boey, 2013; Thunnissen, 2016; van den Brink et al., 2013).

Table 3 Summary of talent definitions and segments in examined articles on TM of academics

	Author(s)	Who is talent?	Talent segment(s)
1.	Badia (2015)	Leadership potential	High potentials
2.	Barginere et al. (2013)	High-performing individuals with high potential for future leadership roles (Rothwell) (p. 71)	High potentials, Managerial talents
3.	Barkhuizen, Mogwere, & Schutte (2014)	support staff	
4.	Barkhuizen, Roodt, & Schutte (2014)	skilled and competent academic workforce (p. 2037)	
5.	Bradley (2016)	talent pool (pivotal, high value-added, roles in both teaching and research … these roles may not be explicit leadership roles (Yielder & Codling, 2004) (p. 15))	Teaching and research talents
6.	Eghbal et al. (2017)	inclusive approach (Huselid, Beatty & Becke [Huselid et al., 2010] state that all individuals have certain talents that must be uncovered and identified. (p. 84))	
7.	Erasmus et al. (2017)	inclusive/developable talent philosophy (p. 86): every employee has the potential to contribute towards the organisation's objectives and this capability may be developed (Meyers, Woerkom, & Dries, 2013) various talent pools (p. 89)	
8.	Lim & Boey (2013)	junior and senior talents (p. 120)	Junior and senior talents
9.	Mohan, Muthaly, & Annakis (2015)	-	
10.	O'Bryan & Casey (2017)	Managerial leaders (p. 12) Schiemann defines talent as "the collective knowledge, skills, abilities, experiences, values, habits and behaviors of all labor that is brought to bear on the organization's mission." (p. 2-3)	Managerial talents
11.	Oludayo, Akanbi, Obot, Popoola, & Atayero (2018)	academic staff	
12.	Oppong & Oduro-Asabere (2018)	directorship roles, pool of potential leaders	Managerial talents, High potentials
13.	Paisey & Paisey (2018)	Talent has been defined in a variety of ways, for example whether it is innate or alternatively, whether it can be acquired, with different organisations taking different approaches across the full spectrum (Meyers, van Woerkom, and Dries 2013). Other questions raised are whether talent must be manifest at the recruitment stage or whether instead its potential can be recognised, and whether the focus should be on people themselves or on their characteristics, such as their qualifica- tions (Thunnissen, Boselie, and Fruytier 2013b). Underlying conceptualisations variously view talent as capital, individual difference, giftedness, identity, strength, or the perception of talent (Dries 2013). In terms of implications for organisations, Minbaeva and Collings (2013) argue that it may not be necessary to always recruit the 'best' in terms of experience or qualifications, or 'A players' for example; instead it is important to focus on outputs and to consider how talent can best be deployed within an organisation. (p. 3) talent was being defined in terms of qualifications rather than other attributes (p. 11)	
14.	Palmer, Hoffmann-Longtin, Walvoord, Bogdewic, & Dankoski (2015)	Department chairs	Managerial talents
15.	Peet, Walsh, Sober, & Rawak (2010)	leader/managerial talent, intern talent (p. 72)	Managerial talents, intern talents
16.	Rastgoo (2016)	Studying of entities of human capital of educational system, talents can be discovered, and managing and training of these talents correctly, the efficiency of employees of educational system can be increased. (p. 654)	

Table 3 (continued)

	Author(s)	Who is talent?	Talent segment(s)
17.	Rayburn, Grigsby, & Brubaker (2016)	Department chairs	Managerial talents
18.	Rutledge, LeMire, Hawks, & Mowdood (2016)	inclusive approach (library employees p. 236)	
19.	Saddozai, Hui, Akram, Khan, & Memon (2017)	Most of the studies define talent as a characteristic which depends on individual abilities, environment in which the individual is working, organization and the circumstances within the organization also affect these characteristics.(Thunnissen et al., 2013). (p. 538) we represent talent as abilities, high performance and potential. (p. 538) model of talent by Gagne (2004, 2007, 2011) (p. 539) Talent is basically defined as a qualified or well skilled worker with specialized skills, professional experience and who can benefit a society through creative work contributions (Uzma, 2010). (p. 539) An academic talent may stand out as he is viewed as a person with high qualification and is considered as an expert in his field and has capabilities that a very few person can achieve, i.e. scientific approach and academic know how. (p. 546) Besides all these abilities most of the respondents also defined talent as a person with interpersonal characteristics like motivation, have strong commitment towards their goal and who are prepared to go extra mile to get the work done… (p. 546) Talent categories: Talent=Abilites, Talent=All employees, Talent=Educated employees, Talent=Performance, Talent=Interpersonal characteristics, Talent=Key personnel, Talent=Ready-made talent, Talent= High potential, Talent=Gifted person (p. 547)	
20.	Salau et al. (2018)	staff (teaching and non-teaching) (p. 1041) employees working there for min 2 years (p. 1042)	Teaching and non-teaching talents
21.	Singh & Singh (2015)	talent has been defined as the sum of a person's abilities – their skills, knowledge, experience, intelligence, judgment, attitude, character, and drive (Michaels et al., 2001) (p. 752)	
22.	Thunnissen (2016)	Within their TM definitions authors adopt different terms for "talent," for example "excellent abilities," but also terms like "key employees", "high potentials" or "those individuals with high potential who are of particular value to an organization" are used. The variety of terms used to define talent reflects one of the most central debates in TM, i.e. whether TM is an inclusive approach which focusses on (the talents of) all employees, or an exclusive approach aimed at attracting and retaining a select group of employees (Tansley, 2011). (p. 58-59) talents are recruited and developed with a broad variety of TM practices to direct their behavior in a direction that fits the organizational needs, and, as a result, the individual is happy and motivated, and individual and organizational performance increases (p. 59) talent: a scientist with extraordinary insights, a great mind who realized critical breakthroughs in his or her academic field (p. 62) Senior and junior academic talents, postdoc researchers and lecturers (p. 66)	Senior and junior academic talents, postdoc researchers and lecturers
23.	Thunnissen & Van Arensbergen (2015)	Generally, in the debate on operationalizing talent five dimensions (or "tensions" as Dries, 2013 calls them) become manifest: subject/object, inclusive/exclusive, innate&stable/acquired&developable, input (abilites, motivation)/output (excellent performance, success), transferable/context-dependent (p. 182-183) DMGT by Gagne (p. 184) Ulrich and Ulrich (2010) argue, talent =competence ×commitment × contribution (p. 185) Talent is a bundle of interrelated components of outstanding abilities, interpersonal characteristics and excellent performance. (p. 195)	
24.	van Balen et al. (2012)	high potentials (p. 314) talent is often defined as a natural ability or capacity, in an academic context it generally refers to the academic quality of someone's past achievements (Thunnissen et al., 2010; Van Arensbergen and Van den Besselaar, 2012), (p. 318) …criteria for talent relate to research performance, teaching skills and motivation. (p. 318) …in the US, where tenure depends on explicitly formulated criteria with respect to quality and quantity of research output (p. 318)	High potentials
25.	van den Brink et al. (2013)	senior academic talent: full professors; junior academic talent: PhD students, postdocs and assistant professors (p. 184) It was found that performance indicators such as the H-index and citation indices were widely used in most academic fields, although predominantly for the initial selection between applicants. In the next phase, where seemingly equal applicants were evaluated, the selection process became less transparent and objective. (p. 192)	Senior academic talents, junior academic talents
26.	van der Weijden, Teelken, de Boer, & Drost (2016)	''Postdoctoral researchers (postdocs) are newly qualified researchers with a Ph.D. and/or MD backgrounds, working autonomously in research at universities or related institutions but without a tenured contract'' (Stanford et al. 2009, p. 3). (p. 29)	Postdoctoral researchers

4. Macro Environmental Factors and Organizational Factors

Our suggested process-based model of TM contains some important macro environmental and organizational factors affecting TM (Fig. 3):

- globalization, technological development, and demographic trends;
- the strategy, role of HRM and HRM strategy, organizational structure and culture, leadership attitude, main area(s) of activities, location(s) and HQ country, and career opportunities, respectively.

As the result of our systematic literature review on TM in HE, we found that TM is connected to and dependent on its context. Such external factors as job demands and job resources (Barkhuizen, Roodt, et al., 2014), external labor market (Thunnissen, 2016), and labor market fluctuation (van Balen et al., 2012) were highlighted in the examined articles.

Some authors were concerned about certain internal factors, such as the organizational strategy (Bradley, 2016), the operation of the organization (Mohan et al., 2015; Salau et al., 2018; Thunnissen, 2016), main areas of activities (Thunnissen, 2016; Thunnissen & Van Arensbergen, 2015), and special organizational factors (van Balen et al., 2012; van der Weijden et al., 2016).

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH QUESTIONS

The purpose of this study was to present the results of a comprehensive systematic literature review on TM of academics, while the following RQs were the starting points of our analysis. RQ1: What can be observed regarding TM and TM processes in HE (based on the literature available in Web of Science (WoS) and Scopus)?; RQ2: Are there any special characteristics of TM of academics?; RQ3: What are the most common TM processes and/or practices in academic institutions?

Regarding RQ1, we observed discrepancies between the approaches of the examined articles to TM and TM processes in HE. The main problem was the conceptualization of TM in itself in the examined literature. We found that only approximately half of the examined articles (54%) contained some kind of definition of TM, while 46% of them did not define TM. At the same time, all the well-known TM approaches were present in the articles. Most of the articles (77%) mentioned TM processes at least, but 23% of them did not. There were several opinions about the interpretation of the entire TM activity consisting of a different number of TM processes. Some authors focused only on the main branches of TM (acquisition and retention), while others were concerned about more sophisticated TM processes.

Regarding RQ2, we found some special issues and characteristics of TM of academics. A substantial issue we encountered during this research was regarding the operationalization of

the staff of HE institutions and/or 'academics' at all. There was no consensus in the examined articles on the subjects of TM. Some sources (e.g., van Balen et al., 2012; van den Brink et al., 2013) referred to teaching and research staff as academics and academic talents, some (e.g., Barginere et al., 2013; Oppong & Oduro-Asabere, 2018) included university support staff as well, while others (e.g., Erasmus et al., 2017; O'Bryan & Casey, 2017) did not really specify what they mean when they spoke about for instance "all university staff" (Lim & Boey, 2013) or "faculty members" (Eghbal et al., 2017) as the employees participating in TM. We presented the theoretical possibilities (Fig. 1): either all or some of those who perform teaching, research, and support tasks (e.g., librarians) could be taken as academics at a given HE institution. Such operationalizations depend on how given researchers see such matters as well on the specificities of the institutional system of HE, which may vary from country to country.

Therefore, we suggest conducting (e.g., region- and sub-field-specific) empirical investigations to analyze the characteristics of the Hungarian HE system and filling the gap about TM of academics in Hungary as available scientific information on the topic is really scarce. For doing this, we suggest following a holistic approach, keeping the complexity of the entire TM activity in mind and relying on our suggested model (Fig. 3) for examining the charachteristics of each of its main components. Regional differences, variant characteristics of the subfields (disciplines) or specialties of the academic field (e.g., teaching versus support) may also occur, which need further empirical examination. Several internal or external catalysts might affect the entire TM activity as well: a special element could be the development of an HRM department and/or systematic and planned HRM practices of HE institutions, the practice and possibility of which is also underexamined in the Hungarian HE system. It would also be beneficial to investigate TM in HE from the perspective of students and other stakeholders, not to concentrate on employees only.

Regarding RQ3, we aimed to collect the most common TM processes and practices at academic institutions, however, we found that in the examined articles there were huge differences regarding TM operationalizations. Overall, it can be said that the process approach of TM in HE is not (really) present in the literature and there is also a lack of a holistic thinking about TM in HE. Many studies examined only parts of the whole process and many authors focused only on a (narrow) part of the entire TM activity without even mentioning the importance of the other parts and the need for them to be integrated with one another.

As shown in Tab. 3, most of the articles distinguished four TM processes and most of them mention at least some of the four TM processes that are present in our suggested process-based model, namely attraction, selection, development, and retention of talents.

One of the limitations of our work is that its input data is from two major databases WoS and Scopus. The extension of these data sources and the inclusion of further relevant

publications would give further value to the findings of this work. Please also note that the lack of relevant publications on the Hungarian HE system is the reason why such publications were not included in the analysis.

Based on our systematic literature review, several potential future reseach questions came up, especially regarding the TM of academics in Hungary. For instance, the followings: What kind of TM approach can be observed in Hungarian HE institutions? How can the need for excellent staff (in the right number and required quality) be covered in academic institutions in Hungary? Are there any Hungarian HE institutions with HRM departments? If yes, how do they carry out TM activities? Are there any differentiations in TM in Hungarian HE according to the academic fields (e.g., teching versus support)? Which academic fields are in the focus of TM in the Hungarian HE system? Are there any common practices of TM of academics in Hungarian HE? Do Hungarian HE institutions segment their (potential) talents (e.g., PhD candidates versus managarial talents)? If so, do TM practices differ from segment to segment? Are there any differences according to the disciplines (e.g., so-called STEM fields versus humanities) under the current economic conditions involving a huge need for talents in several jobs? How can Hungarian academic institutions acquire and retain their talents in order to achieve the organizational goals?

SUMMARY

Talent management (TM) has become a key management issue recently. Several studies found that finding and keeping talented people is the "single most important managerial preoccupation for this decade" (Thunnissen et al., 2013, p. 1744)—and nowadays this is also true for institutions of higher education (HE). However, no study summarizes already existing knowledge regarding TM of academics, while TM literature is frequently criticized for lacking sound theoretical bases. Hence, the purpose of this study was to present the results of a comprehensive systematic literature review on TM of academics, answering three research questions: What can be observed regarding TM and TM processes in HE (based on the literature available in Web of Science (WoS) and Scopus)?; Are there any special characteristics of TM of academics?; What are the most common TM processes and practices at academic institutions?

With the aim of conducting a comprehensive review, we searched for publications in the complete Web of Science (WoS) and Scopus databases with the search string: "talent management" AND (adacemi* OR "higher education" OR universit*) with no restrictive conditions on the date of publication. Non-English and non-article items were excluded, which resulted in 68 (WoS) + 108 (Scopus) items; data collection was closed on September 30, 2018. Due to the overlapping of the two databases, eventually 124 articles remained for review. Out of which only 26 articles were found actually relevant for analysis based on their contents and the often cited definition of TM by Collings and Mellahi's (2009).

In the examined articles we observed different operationalizations of 'academics'. Some authors referred to teaching and research staff as academics, some included university support staff as well, while others did not really specify what they mean when they speak about, for instance, "all university staff" or "faculty members". We summarized the theoretical possibilities: either all or some of those who perform teaching, research, and support tasks (e.g., librarians) could be taken as academics at a given HE institution. Such operationalizations depend on how given researchers see such matters as well on the specificities of the institutional system of HE, which may vary from country to country. In line with the variedness of the operationalization of the concept of academics, the areas of study of the examined articles were also diversified ranging from academia through academic libraries and HE to academic medical schools.

We found that in only 21 out of the 26 publications was TM a central topic, while in a few articles (5) TM was only marginally covered. These 5 articles were concerned primarily on such topics as leadership, succession planning, university management, and competency management. Most of the of the examined

articles (23) contained empirical analyses covering various regions of the world from China, through Ghana to the Netherlands and the US.

One of the main problems we encountered was the conceptualization of TM in the examined literature. We found that only approximately half of the examined articles (14) contained some kind of definition of TM, but all the four well-known TM approaches were present; and most of the articles (20) mentioned at least TM processes. There were several opinions about the interpretation of the entire TM activity consisting of a different number of TM processes. Some authors focused only on the main branches of TM (acquisition and retention), while others were concerned about more sophisticated TM processes.

Due to the lack of the consensus regarding the meaning of TM and the TM processes, we suggested a new, special, process-based framework. Hence, in addition to descriptive statistical analyses, we also reviewed the selected articles following our suggested a new, holistic, process-based TM model that could be a foundation of creating future TM programs in academia or any other field. The model consists of four main elements following the logic of Gagné's (1995, 2004, 2009a, 2009b, 2010a, 2010b) DMGT 2.0 model: (1) Talent potentials, who will form the (2) Talent Segments as the result of the processes of (3) Talent management, while certain external and internal (4) Catalysts may influence the process.

During the systematic literature review on TM in HE we found that several authors were concerned about competency management and/or certain competencies of talents, but they didn't define talents by their competencies. We suggested implying Spencer and Spencer's competency cluster and that the required high-level competencies should be determined in order to select the employees to be labelled as talent potentials on the given field.

The examined literature significantly differed in their interpretation of TM processes, but most of the articles distinguished four TM processes and most of them mention at least some of the four TM processes that are present in our suggested, process-based model, namely attraction, selection, development, and retention of talents.

There were discrepancies regarding the conceptualization of talent, as well. We found that almost all (25) of examined articles contained some kind of conceptualization of talent, but they differed in their approaches to talents and types of talents. Some articles mentioned specifically academic talents, and differentiated them according to two aspects: their main tasks – teaching versus research versus support talents, and their seniority – senior versus junior talents. Regarding talent segments, most of the articles mentioned managerial/leadership talents only, while others also contained high potentials or intern talents. In our new, process-based TM model, we differentiated five segments of talents according to their specific characteristics and varying needs regarding TM processes and practices: managerial/leadership talents, high potentials, critical skill employees, graduate/Gen Z talents, and trainee talents.

The examined articles presented that TM is connected to and dependent on its context, for example, job demands and job resources, or labor market fluctuation were mentioned as important external factors. Besides, some authors were concerned about certain internal factors, such as the organizational strategy, the operation of the organization, main areas of activities, or other special organizational factors as well. In our process-based model of TM, we highlighted, on the one hand, globalization, technological development, and demographic trends as macro environmental factors; on the other hand, the strategy, role of HRM and HRM strategy, organizational structure and culture, leadership attitude, main area(s) of activities, location(s) and HQ country, and career opportunities as organizational factors, which might affect the entire TM activity.

The article contributes to the theoretical advancement of the field strengthening the theoretical bases of the field and of future empirical research works through the model we developed for TM in HE, while it also highlights the need for further (e.g., region- or sub-field-specific) empirical investigations.

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