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Diversity management at the tertiary level: an attempt to extend existing paradigms

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at the
tertiary level

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Abstract

Purpose – The purpose of this paper is to adopt a holistic diversity lens with the aim to enhance the understanding of the multifaceted paradigms for diversity management at the tertiary level.

Design/methodology/approach – This contribution takes the inspiration of existing diversity paradigms used in business settings and relates them to higher education. It then articulates them in greater depths in line with the diversity segments of the so-called higher education awareness for diversity wheel and seeks a common denominator that may be shared across disciplines by adding an eclectic and context-specific approach.

Findings – It was identified that the underlying assumptions which constitute the commonly known diversity paradigms are only partially applicable for the tertiary level. It is further suggested that in view of the highly dynamic kaleidoscope of higher education institutions, multiple, at times conflicting rationales for diversity management need to be addressed.

Originality/value – This paper seeks to address the paucity of studies with regard to diversity management at the tertiary level. By drawing on relevant paradigms and relating them to specific diversity segments, this study intends to make a meaningful scholarly contribution to the existing body of knowledge.

Keywords Higher education, Diversity management, Diversity paradigms, HEAD wheel

Paper type Research paper

Introduction

In European higher education institutions (HEIs), diversity aspects have recently gained momentum due to the rising demand for the creation of inclusive teaching, learning and service environments (Vedder, 2006). This is all the more relevant in view of increasingly heterogeneous student populations that are demographically different from traditional students in terms of age, modes of study, admission pathways and social integration.

For these purposes, this paper sets out to discuss a multidimensional and intersectional approach toward diversity management that is particularly suited for the higher education sector. Despite the existence of some widely embraced models of diversity (Loden and Rosener, 1991; Loden, 1996; Gardenswartz and Rowe, 2003), such a perspective seems useful for the following reasons: first, the much cited diversity wheel is a model used to map social characteristics of personal identity. In doing so, it puts personality at the core as the innately unique aspect that permeates and unities all other layers. In contrast to this view, the frame that is presented here does not depict personality as a black box in the center, but rather seeks to integrate it as a cognitive dimension encompassing different learning strategies, problem-solving approaches and prediction and perception models.

Second, existing models look at workforce diversity without taking account of any university-specific demands and opportunities. Third, no particular attention is being paid to the



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requirements of the student population and how to manage an increasingly diverse student body. Hence, this model attempts to combine workforce and student diversity in one framework.

While the diversity wheel seeks to illustrate the myriad combinations of characteristics that make up diversity, the current model can be used as a visual organizer for HEIs to capture the interplay of five crucial diversity segments at the tertiary level, namely demographic, cognitive, disciplinary, functional and institutional diversity.

In an attempt to provide a comprehensive framework to address diversity in its full entirety, a governance frame – which the authors would like to call higher education awareness for diversity (HEAD) wheel – is introduced. It looks at the concept of diversity from a demographic, cognitive, disciplinary, functional and institutional angle and seeks to capture a broad spectrum of variables that impact the effect of diversity management at the tertiary level. It is further aimed to synthesize existing diversity paradigms (resistance, discrimination, access, learning and responsibility) and provide an overview of the underlying rationales for diversity management. Thereby, an additional paradigm, namely “pluralism and eclecticism,” is identified and discussed in detail. It is also argued that HEIs draw on differing rationales – e.g. education ethics, social dimension or third mission – in their attempt to implement diversity strategies. While organizations tend to put forward business case arguments and corporate social responsibility (CSR) reasons when driving diversity initiatives, HEIs are more likely to engage in social mobility discourse. This is due to historically and socially grown values which include notions of morality (Langholz, 2014) and foreground equity and humanistic perspectives.

The HEAD wheel – a holistic approach toward diversity management at the tertiary level

The HEAD wheel (Gaisch and Aichinger, 2016a, b), short for higher education awareness for diversity provides a comprehensive overview of five diversity segments that play an integral role at the tertiary level (Figure 1). It is understood as an all-inclusive lens that takes account of the reality that people “have both multiple differences and similarities” (Kirton and Greene, 2005, p. 132) that intersect and consequently reshape the meaning of diversity. This frame seeks to reinforce the perspective that persons studying and working at an institution of higher learning draw on a variety of demographic, cognitive, disciplinary, functional and institutional backgrounds that flow into one another, mostly with no defined borders.

Given that the wheel has no designated access point, it lends itself well to act as a gate-opener and entrance portal to various angles of diversity. Due to the intersectional nature of the wheel different agents can enter diversity-related issues through one of the five HEAD wheel segments and therefore approach them through different doors, with differing rationales and various purposes. From there, further sensitivity for diversity-relevant topics may unfold and further develop. In other words, if someone deals with interdisciplinary teams, they will most certainly need to look beyond disciplinary diversity and also embrace factors of demographic, cognitive, functional and institutional differences. Team members may not only have different epistemological and ontological traditions; they will be shaped by these different worldviews which results in substantially varied knowledge bases and cognitive styles. Additionally, they may be embedded in specific functional or institutional cultures with fundamentally different assumptions, spheres of action and targets. At the same time, each member has distinctive demographic characteristics which may have a decisive impact on their mode of empowerment.

A closer look at the wheel reveals a second ring which depicts specific challenges and potential opportunities that HEIs are confronted with within this kaleidoscope of diversity. Demographic diversity as one component of the changing landscape of higher education is increasingly reflected by the growing number of non-traditional students enrolling in colleges and universities (Chung *et al.*, 2014). To cater the needs of this newly arriving student population, HEIs have to create operating conditions that allow for more flexible modes of learning and a more diversity-sensitive student lifecycle management (Gaisch and

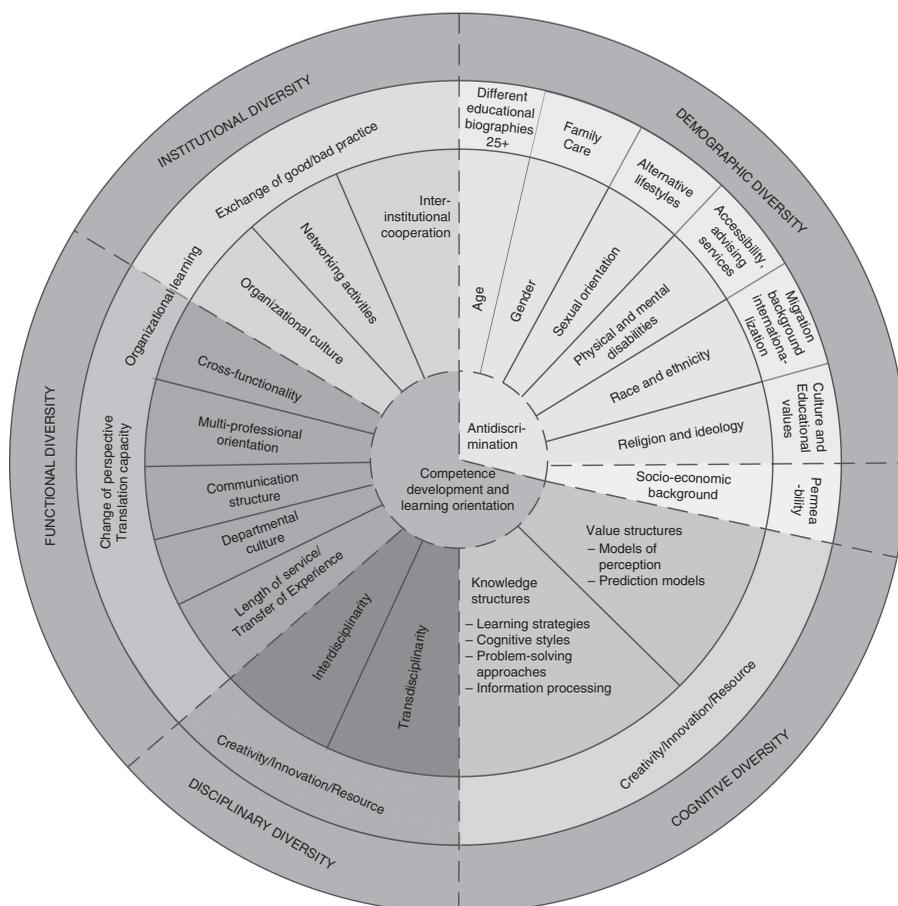


Figure 1. HEAD wheel

Aichinger, 2017). As to the other four diversity segments, it is believed that by drawing on all those facets as a resource within an all-inclusive learning, teaching and working environment (David, 2010, p 5), all stakeholders may obtain equitable academic and institutional benefits. In the middle of the wheel, one can find the main drivers for diversity-related action which are predominantly striving for antidiscrimination, fairness and equity, competence development and learning orientation.

To begin with, demographic diversity is increasingly regarded as a normative goal for HEIs to address social groups that had previously been excluded from higher education. Understandably, then, that new populations – differing in age, gender, sexual orientation, physical and psychological abilities, ethnicity, religion and socio-economic status from the norm – bring about new challenges for HEIs. To successfully integrate historically underrepresented student populations and to increase diversification, accessibility and permeability, HEIs need to offer support structures that promote educational equity, accountability and social justice.

The second segment depicted in the HEAD wheel is the one of cognitive diversity which encompasses differing value structures such as various models of perceptions and prediction, predominantly due to socio-cultural socialization. They are manifested in tacit assumptions of commonly accepted values, all of which are salient within a specific culture.

Hence, they are frequently crystallized through the adoption of social identities and revealed in specific cognitive processes. The second component of cognitive diversity is based on different knowledge structures, so to say on various learning strategies, cognitive styles, problem-solving and information processing approaches. These structures are strongly linked to the respective educational background or disciplinary socialization.

In this context, it is vital to outline that handling cognitive diversity is a critical success factor for HEIs. To effectively deal with cognitive diversity, teaching and learning settings require transformative intellectuals (Giroux, 1992), so to say teaching staff that “call into question their dominant societal and educational values that typically frame their teaching approaches” (Gaisch, 2014, p. 21). At the same time, they need to promote critical thinking and ethnorelative reflection (Bennett, 1986). In doing so, they may use difference as a resource by taking the advantage of an international student body and draw on their different socio-cultural perspectives and approaches toward teaching and learning.

Disciplinary diversity as the third segment of the HEAD wheel relates to specific and target-oriented cooperation between persons that are socialized in disciplines grounded in different epistemological backgrounds. According to Kuhn (1970), scientists judge contributions and agree on their reliability and universal truth based on a shared perception of the world leading to visible outcomes. When it comes to transdisciplinary border crossing, however, this set of shared practices no longer applies. Mutual trust in each other's expert knowledge is vital when working in interdisciplinary teams. Appreciation of various skill-sets and a dynamic exchange of different disciplinary perspectives create new opportunities and may lead to more creative solutions and a strengthened potential for innovation. In the context of higher education, disciplinary diversity seems to increasingly become a strategic imperative for graduate employability. For a rapidly changing employment market, new job profiles that also entail entrepreneurial and innovation skills, intercultural understanding and critical thinking ability have become a critical asset (see Yerevan Communiqué, 2015). Undoubtedly, broad educational choices and settings that aim to create inclusive and inspiring learning spaces for all students are a prerequisite to prepare future graduates for interdisciplinary border crossing. What is more, HEIs that engage in interdisciplinary and transdisciplinary research activities seem to be best prepared to establish close ties with and sustainable development for the local industry. In doing so, they go beyond the classical tasks of teaching and research and pursue the so-called “third mission” agenda which may be broadly described as “dissemination or outreach activities” for increased innovation and social change (Guldbrandsen and Slipersæter, 2007, p. 113).

Functional diversity is achieved if employees (and in HEIs also students) take on different roles, perform different functions, engage in different practices or work outside their traditional functional areas. This blurring of boundaries requires the ability to change perspectives in line with the tasks and groups involved. Institutions that recognize the added value of functional diversity encourage cross-functional team work and support a multi-professional orientation. They also foster a departmental culture in which good and bad practices are shared, and the transfer of experience is appreciated. Hence, segment 4 of the HEAD wheel takes account of functional diversity and places an institutional focus on internal processes of organizational learning, team cohesion and team performance. In this regard, it was found that functional diversity positively affects group performance and innovation (Auh and Menguc, 2006).

Consequently, working in functional groups may help to detect blind spots or mental models that typically impair an agent's capacity to see beyond one's department or discipline (Senge, 1990). A shift of perspective may occur along the lines of interdepartmental communication and intra-organizational cooperation where intergroup relations can unfold and know-how and expertise can be passed on to junior or uninitiated colleagues. When taking on different roles on campus, be it as a student advisor, tutor, marketing assistant or representative, also students learn to think laterally and get prepared

for future challenges of the world of work. Thus, HEIs profit from a student population that is capable of seeing the big picture.

The fifth and last segments of the HEAD wheel take the institutional diversity which, in this context, refers to the collaboration and network activities with external stakeholders, be they different HEIs, industrial, political or scientific partners. At the same time, knowledge of coherences and awareness of how functional systems work can help to enhance collaboration and create emergence. If this happens, institutional diversity can be a source for institutional learning, a resilient foundation for sustainable development (McGinnis and Walker, 2010). In addition, a more diversified HE system may also enhance students' choices and consequently improve their levels of participation (Huisman *et al.*, 2007, p. 563). This certainly also serves the purpose of the third mission mandate according to which HEIs may cooperate with non-university institutions for the sake of a societal contribution, either with regard to teaching, learning, applied or fundamental research activities or social responsibility.

Diversity paradigms revisited

In the following, an attempt is made to sketch the paradigms for diversity management and to explain why certain diversity perspectives are more likely to be found in specific settings than others. The five diversity paradigms are summarized in Table I together with their strategic alignment, perspectives, focus and objectives. Given that all those paradigms were identified in and related to a business context, it is attempted here to also look at them from a higher education point of view and to carve out how they may differ in terms of rationale.

When taking a closer look in Table I, it becomes obvious that the resistance approach is adopted by organizations that seek to maintain the status quo of demographic and cultural homogeneity (Dass and Parker, 1999). In general, diversity is regarded as a threat which contributes to the resistance of change, the reproduction of inequality and discrimination at the workplace (Kirton and Greene, 2005). In this context, businesses employ accommodative strategies to demographic pressures by foregrounding the advantages of a monocultural organization that mainly consists of "old boys" networks (Oakley, 2000) and closed shops (Rastetter, 2006). Such a groupthink also applies to HEIs where homosocial reproduction, so to say the tendency to advance and recruit others similar in appearance or background (Gilbert *et al.*, 1999), is coupled with the demand for excellence and elite thought. What we would like to call an "ivory tower attitude" toward the outer circle appears to permeate both systems, for one in the form of a rigid monolithic organization (Cox, 1991), for the other in the shape of a "monoversity" (Matuko, 2009) where monocultural HEIs counteract current efforts of social mobility and permeability of class structures and social categories.

In contrast to the resistance approach that is blind to all diversity segments, the discrimination and fairness paradigm is clearly linked to the demographic segment of the HEAD wheel by placing emphasis on equal opportunity, fair treatment, recruitment and compliance of protected groups. Here, difference is regarded as a cause of problems with a normative obligation to accommodate persons of different backgrounds and recognize and support all kinds of demographic minority groups. While companies may be predominantly driven by political correctness and fears of non-compliance (Kulik, 2014), HEIs tend to foreground education ethics and seek to create a "safe, respectful and supportive space which is inclusive, ensuring fair and equal treatment for all through appropriate support mechanisms" (Caruana and Ploner, 2010, p. 58). What the Bologna communiqués address as the "social dimension in higher education" are, *inter alia*, "alternative access routes targeting non-traditional learners and guidance and counseling services available to students during their studies" (Crosier *et al.*, 2012, p. 72). While the corporate system also takes account of equal opportunities for previously excluded persons, HEIs seem to have an even stronger commitment to enabling a broader participation of disadvantaged groups, and in doing so,

Table I.
Diversity paradigms
and their differing
rationales: a
comparison between
business and HE
rationales

Diversity paradigms	Prescription	Focus	Business rationale	Higher education rationale	Common denominator
Resistance (Dass and Parker, 1999)	Sustain homogeneity	Diversity = threat Reactive	Diversity-resistant Groupthink	Elite thought Excellence for an exclusive group	Protection of status quo Keep established insider Ivory tower attitude
Discrimination-fairness (Thomas and Ely, 1996)	Assimilate individuals	Diversity = problem Defensive Surface level = based on the principle of color blindness	Compliance with law Political correctness normative	Education ethics Educational equity (stakeholder) participation Social dimension	Equal opportunities Fair treatment Mentoring and career development programs
Access legitimacy (Thomas and Ely, 1996)	Accept and celebrate differences	Diversity = competitive advantage Accommodative surface level = based on observable parameters	Economical/business perspective	Equity perspective Educational mandate on behalf of society	Societal attitude Access underrepresented markets to get broader customer base Achieve better (financial) results
Learning effectiveness (Thomas and Ely, 1996)	Acculturate pluralism	Diversity = resource Proactive deep level = non observable traits	Collective learning to enhance performance of all employees	Employability focus Collective learning to enhance performance of all employees and students	Recruit a broader pool of students/staff inclusive attitude Transformation of learning capability and mental models due to organizational learning and institutional cooperation
Responsibility sensitivity (Schulz, 2009)	Value differences and communalities	Diversity = social responsibility Accountable/sustainable	Corporate social responsibility	Third mission Humanistic conception Academic responsibility for the creation of a democratic and sustainable society	Transformative attitude Sustainable impact Co-creation for regional transformation responsible attitude

increase the overall number of students. Hence, educational equity is increasingly gaining in importance (Kugelmass and Ready, 2011) which is also reflected in the attempt to open up narrow lenses of inequality by addressing a much wider array of contextual factors that impact the perception of justice (Baye and Demeuse, 2008). In this sense, educational equity is understood as the capacity of institutions of higher learning to engage in institutional action that improves the access and retention of a minority student population (visualized in the demographic segment of the HEAD wheel) to also reflect societal diversity. This approach is certainly reinforced through specific legislations, incentive funding and a general discourse related to social justice and social responsibility.

Access-legitimacy works with the assumptions that diversity – as a useful instrument directly influenced by business forces – can be employed as a competitive advantage in multicultural societies. It brands diversity in line with accommodative strategies aimed at increasing a company's reputation of a good employer (Mairescu and Wrigley, 2016) or attracting relevant employees for a particular organizational goal (Curşeu, 2015). From a business perspective, this paradigm is useful to gain access to previously neglected customer bases, attain legitimacy by diverse stakeholders and positively affect an organization's public image (Roberson and Park, 2007). What Thomas and Ely (1996, pp. 83-85) describe along the lines of “accepting and celebrating differences” are organizational objectives that make business sense and help to achieve competitive edge. This is in line with the “value all differences” paradigm brought forward by Palmer (1994, p. 255) or “valuing diversity” approach adopted by Loden (1994, pp. 294-300) where cognitive diversity with its differing value and knowledge structures is generally acknowledged as a source of creativity and innovation. Undoubtedly, the value of such a stance may also be significant for HEIs especially when it comes to the recruitment of a wider pool of students and staff. Yet, the question remains whether the focus on diversity issues should not go beyond an economization of difference (Andresen and Koreuber, 2009) and also embrace an educational mandate on behalf of society. HEIs have a societal duty to holistically educate future graduates for the challenges that an increasingly complex future holds in store. To achieve this, students need to be aware of the existence of various models of perceptions and prediction and also be trained to deal with cognitive styles, problem-solving approaches and information processing that differ from their internalized value and knowledge structures (Gaisch and Aichinger, 2016a, b). Thus, it strongly refers to the cognitive dimension of the wheel while at the same time opening up for an intersectional approach. The acquisition and application of practical knowledge together with transversal skills are crucial competencies that HEIs need to convey. To understand that a reasonable breadth of education may enable future graduates to better deal with issues beyond their disciplinary content knowledge requires an inclusive and accommodating attitude toward all segments of the HEAD wheel.

When applying the learning-effectiveness paradigm to HEIs, it seems to generate the same effects as in enterprises. Not only are differences and similarities valued in both systems, but the appreciative way of dealing with diversity as a concept (Krell, 2011) also adds to customer satisfaction, social responsibility, innovation and increased productivity. Here, companies seek to tap into new and often foreign market segments with a sharp eye on organizational learning. In a similar vein, HEIs open up to an increasingly diverse student population from a variety of socio-demographic backgrounds. What both systems have in common is a vested interest that staff (and in the latter case also students) acquire appropriate skills that equip them with the ability to manage cross-border projects, tackle complex global challenges and proficiently interact with stakeholders around the world. To achieve this, both individual growth and organizational growth are a key parameter that allows agents to flexibly adapt to dynamic changes, often for the benefit of the respective organization. In this sense, transformative interventions need to be offered that encourage deep-level diversity through extended interactions and enhanced group efficacy. Since the

acculturation in pluralist knowledge communities is based on collective and organizational learning processes (Langholz, 2014), suitable windows of opportunities need to be provided so that cognitive, disciplinary, functional and institutional cooperation between different individuals can be achieved.

The responsibility-sensitivity paradigm seems a logical progression from the recent attention given to employee-focused CSR and ethical aspects of human resource management (HRM). Increased scholarly interest has been devoted to socially responsible HR practices in relation to diversity management (Mazur, 2013). Not only has diversity management been one of the most popular HRM strategies since the 1990s, but it also has by now become a widely accepted and powerful management tool for corporate governance (Mazur, 2013, p. 43). What is foregrounded here is a diversity perspective that has both accountable and sustainable impact. While CSR is predominantly taking place at firm level and is therefore an issue for international corporations, such “visible doing good activities” (Minor and Morgan, 2011, p. 44) in the field of diversity management are becoming increasingly vital in the tertiary sector too. What has been generally described as “third mission activities” throughout HEIs are measures that facilitate technology transfer, outreach and engagement to benefit society (Pirainen *et al.*, 2016). Such activities include non-commercial and social innovation or consulting, services to the community, and/or contracts with industry and business enterprises (Koryakina *et al.*, 2015). In this sense, the humanistic conception of HEIs and academic responsibility for the creation of a democratic society take shape in activities that support sustainable development. On a similar note, it is also vital to engage in cooperation with differing enterprises and institutions to further accelerate technology transfer. On these grounds, it is reasonable to assume that both the cognitive and institutional segments of the HEAD wheel are particularly applicable.

The glue that holds both systems together is a sharp awareness that a responsible attitude toward society is not only a nice to have, but also seems to become a prerequisite for modern enterprises and knowledge communities.

A need to extend current paradigms

Although the five previously discussed paradigms appear to well describe different prescriptions and rationales for engaging in diversity-related activities, they still seem – so it is argued by the authors – not fully capture the dynamic interplay of diversity aspects that are prevalent within complex organizations and institutions of higher learning with frequently conflicting interests and forces.

What needs to be foregrounded here is a context-sensitive motivational needs-driven approach for diversity management that facilitates intersectional perspectives and a deeper discussion on the socio-demographic and socio-economic phenomena that currently shape both corporate and institutional realities and thus leads to “a shift of perspective from a deficit approach to an approach that views the diversity of their students and staff as an asset (potential approach)” (Langholz, 2014).

To adopt such a lens, a further paradigm is introduced, which we would like to refer to as “pluralism and eclecticism” to take account of the complex societal challenges of today’s knowledge society that need to be addressed with informed decisions in a context-specific manner. In line with the dynamics of our contemporary world in which demographic shifts, technological advances and globalization reshape our lives, industries, working areas and education systems, this paradigm is of eclectic nature. In this sense, it is not determined by one single driver but draws on intersectional considerations and multiple rationales. By taking account that an organization is not a single, cohesive and static entity but exists of competing powers, conflicting interests and a complex interconnected constellation of factors that influence an aggregate of individuals at multiple levels, it points to more fluid constructions of diversity paradigms.

In this sense, diversity is regarded as a context-sensitive commodity that can be pro-actively used in line with the corporate or institutional mission statement, with the formal or informal change management strategy or the willingness to engage in adaptive action.

In order to eclectically draw on specific paradigms and make informed and context-specific decisions, it is vital to have an extensive knowledge base of the multitude of diversity paradigms, their underlying rationales, prescription and focus. This is where pluralism comes into play – meaning that relevant stakeholders need to possess a vast repertoire of differing strategies. By adopting a situational lens, dedicated action toward diversity management can be sustained on various levels with certain variations in line with the respective organizational/institutional/departmental vision, mission and strategic outlook.

Given that this newly coined pluralism-eclecticism paradigm takes the dynamics involved in diversity management into account, it allows for an intersectional analysis of all previously discussed diversity segments. Dynamic systems with their inherent conflicting interests most certainly need to subscribe to more than one diversity paradigm. Consequently, knowledgeable agents require the openness and adaptability to adopt several approaches and relate them to specific settings. They need to look beyond the narrow confines of their internalized settings and further anticipate and begin to understand the broader context of diversity management.

Not only does this customized approach lend itself more naturally to the development of a contextual understanding of the diversity aspects at stake, but it also refrains from either/or solutions that may have a somewhat limited view of the underlying mechanisms that enable or disable specific diversity action and interventions. Behind any diversity management activity – we would claim – lies a motivational or needs-driven explanation which may lead to a constructivist diversity paradigm shift. In this light, the ability of contextualized and critical high-order thinking and interdisciplinary, transdisciplinary and translational action should become the major driver behind any diversity-related intervention.

In Table II, diversity paradigms are extended by the pluralism/eclecticism approach.

Theoretical and practical implications

It is argued here that as HEIs want to attract more demographic diversity (demographic segment), they should not only focus on fairness and antidiscrimination paradigm types of initiatives which manifests itself in directives on equality treatment that are up to now most common in HEIs (such as preventing lawsuits and fulfilling legal obligations), but also try to market themselves to diverse demographic groups (access and legitimacy paradigm) or put forward a diverse academic and administrative staff. At the same time, they should try to understand whether certain demographic traits have special linkages with specific disciplinary areas or with specific cognitive styles (learning-effectiveness paradigm). Here, women in STEM studies (Beede *et al.*, 2011) may provide crucial impetus as well as studies that take reflective accounts of academic content, student characteristics and faculty beliefs (Tsui, 2001). Hence, a holistic integration of diversity management in HEIs may lead to a paradigm shift from a deficit approach (antidiscrimination angle) to a more resource-based approach (learning effectiveness) that considers the diversity of students and staff as an asset.

To become a genuine transformative institution of higher learning (responsibility paradigm) where regional and societal engagement and social innovation are foregrounded (in the sense of the third mission mandate but also in line with the responsibility-sensitivity paradigm), it not only requires industry cooperation and outreach activities but also international collaboration with other HEIs (institutional diversity).

Table II.
Extension of existing
diversity paradigms
and their differing
rationales

Diversity paradigms	Prescription	Focus	Business rationale	Higher education rationale	Common denominator
Resistance (Dass and Parker, 1999)	Sustain homogeneity	Diversity = threat reactive	Diversity-resistant Groupthink	Elite thought excellence for an exclusive group	Protection of status quo Keep established insider Ivory tower attitude
Discrimination-fairness (Thomas and Ely, 1996)	Assimilate individuals	Diversity = problem Defensive surface level = based on the principle of color blindness	Compliance with law Political correctness normative	Education Ethics Educational equity (stakeholder)	Equal opportunities Fair treatment mentoring and career development programs Societal attitude
Access legitimacy (Thomas and Ely, 1996)	Accept and celebrate differences	Diversity = competitive advantage Accommodative surface level = based on observable parameters	Economical/business perspective	Participation social dimension Equity perspective Educational mandate on behalf of society Be better prepared for a highly complex world Employability focus	Access underrepresented markets to get broader customer base achieve better (financial) results Recruit a broader pool of students/staff inclusive attitude
Learning-effectiveness (Thomas and Ely, 1996)	Acculturate pluralism	Diversity = resource Proactive deep level = non observable traits	Collective learning to enhance the performance of all employees	Collective learning to enhance the performance of all employees and students	Transformation of learning capability and mental models due to organizational learning and institutional cooperation
Responsibility sensitivity (Schulz, 2009)	Value differences and communalities	Diversity = social responsibility Accountable/sustainable	Corporate social responsibility	Third mission Humanistic conception Academic responsibility for the creation of a democratic and sustainable society	Transformative attitude Sustainable impact Co-creation for regional transformation Responsible attitude
Pluralism eclecticism (Gaisch <i>et al.</i> , 2017)	Customize differences and intervention	Diversity = context-sensitive -commodity dynamic	Motivational needs-driven approach	Inter- and trans-disciplinary thinking	Implement diversity management in line with organizational culture Dialogical attitude

Conclusion

The core contribution of the frame of reference that was presented in this paper is its systematic, wide-scope and cross-sectoral way of addressing diversity segments at the tertiary level that allows for a contextual understanding of diversity management in a more nuanced way. As such, the HEAD wheel may serve as an academically informed qualitative assessment tool for diversity managers that wish to make more informed decisions. Such action may go beyond either compliance or opportunity-oriented diversity approaches but address genuine and context-specific needs. To identify those needs, the HEAD wheel may serve as an overarching structure that enables an in-depth understanding of existing practices, its consequences, limitations and underlying rationales.

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Service marketing mix as input and output of higher and technical education

A measurement model based on students' perceived experience

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Service
marketing mix

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Abstract

Purpose – The purpose of this paper is to examine the relationships of service marketing mix (SMM) as service input and service output in terms of students' performance, satisfaction and referral act in context to higher and technical education (HTE) through the application of structural equation modeling.

Design/methodology/approach – A quantitative research, conducted through a self-administered survey composed by a closed-ended structured questionnaire, was incorporated for the students who were enrolled in the technical educational institutions situated in the Khandesh region of India.

Findings – The findings of this study revealed that traditional SMM is statistically linked with the performance of students in terms of skill and knowledge enhancement, satisfaction and referral act of students, which are perceptible new emerging SMM; performance, pleasure and pointing out in terms of service output.

Practical implications – Integrating SMM as service input and service output are productive for HTE in enhancing growth (quantitatively) by the inclusivity of diversified students and development (qualitatively) by enhancing their performance for global standing, making them satisfied and motivating them for recommending their institution to others. This integration can be utilized as a yardstick by the institutions for staying ahead in students' market with a distinctive competitive advantage.

Social implications – Growth and development of HTE will raise a society's quality of life and thereby increase a country's socio-economic status.

Originality/value – The study has exhibited SMM as input and output of a service system that is useful for the growth and development of HTE. The measurement tool presented is effective in (re)framing policies on SMM as service input based on desired service output.

Keywords Higher and technical education, Measurement model, Service marketing mix, Service marketing, India

Paper type Research paper

Introduction

In India, the All India Council for Technical Education (AICTE), a statutory and apex body for regulating and framing policies, designates Technical Education (TE) as programs of higher education in the field of engineering, management and pharmacy education (AICTE, 1987). Higher and technical education (HTE) is vital for developing social aspects, strengthening the industrial growth, driving the economic development of the country (Blom and Cheong, 2010; Vrat, 2009) and lifting individual quality of life (Rojewski, 2010). Although the growth of TE in India has been notable and exponential during the last decade with setting up of new private funding technical educational institutions (TEIs) and increased intake capacity in existing TEIs, it has headed non-directionally. A strategic marketing approach and service quality issues remain in the dialogue box of TEIs solely, which then elicited substantial redundancy in India. TE is critical to India's ambitions of establishing its reputation as a major competitive player in the global knowledge of economy and can be a treasure house in terms of skill enhancements that are directly linked



with the earnings of the individuals and economic growth of the country (Sarma and Sharma, 2014). Several studies revealed diminishing enrollments and closing-down of institutions due to their lack of response to the changing students' behavior pattern. Many authors have recognized the importance of delivering educational services that drive students into the TE setting (Burrell and Grizzell, 2008). In a competitive market with diverse needs, a substantial literature has been transformed on marketing concepts from other service sectors to the education sector (Bugandwa Mungu Akonkwa, 2009).

Technical education in India – marketing opportunities and challenges

(Goel and Vijay, 2011) sees TE as a powerful medium in manpower development catering to the needs of the industry and society and, noteworthy, contributing to the economic growth of countries. The intention of TE is to provide managerial and technical skills for the overall development of human being (Burton, 1969). In India, the service sector almost contributes 50 percent to the gross domestic product, which creates the significance of service offerings. Indian Government's new projects, Smart City development, Skill India, Digital India, Start-up India, FDI enhancement, National Investment and Manufacturing zone, creation of Industrial Corridor, are heading India toward a global manufacturing hub and also moving to generate a huge number of jobs and entrepreneurial opportunities (Mahajan and Golahit, 2017c). These initiatives are expected to create 10–15 percent rise in employment. The recent union budget has planned to promote new 1,000 private universities for producing trained manpower to meet services and industry requirements along with 100 percent FDI allocation to the education sector. This is the biggest opportunity in terms of involving and developing a rural and tribal population of India, which constitutes almost 60 percent of the Indian population (Census Commissioner of India, 2011). The most important and urgent reform in HTE is, therefore, a necessity to fulfill the needs and aspirations of the rural and tribal students and thereby making HTE the commanding gadget for social, economic and cultural transformation necessary for achieving India's goals.

In India, TE contributes up to 18 percent in terms of enrollments to higher education (MHRD India, 2018; UNESCO, 2015). India has the world's third largest scientific and technical manpower; however, its availability per million country's population is relatively low as compared to other developed countries (Shukla, 2005). According to a recent study made by Wheebox, a leading talent assessment company of India, 75 percent students availing TE rated the Indian TE system below three on a five-scale rating (CII and Wheebox, 2014). As per the statistical dashboard available on the AICTE website, India has around 10 thousand institutions offering TE programs with an intake capacity of 35 lacs as on 2018; however, almost 50 percent seats of intake capacity have not been occupied and around 65 percent of techno-graduate students did not get jobs through their institute's campus placement drive (AICTE, New Delhi, 2018). Thus, the quantitative gap in relation to the intake capacity and actual enrollments and the qualitative gap pertaining to the numbers of students graduating from TE study and their placements in job market are widening year by year. One of the main reasons for diminishing enrollments is the failure to meet the expectations of stakeholders. Secondly, due to the absence of certain quality service standards in TEIs, students are lacking in the skill competency required for the job market (Pal Pandi *et al.*, 2018).

In case of the Khandesh region (India), which is a rural, illiterate and socially backward region of India (Census Commissioner of India, 2011), the situation is even more serious. Prospective students counting almost two and half times more than the intake capacity (available seats) had shown their interest to join TE during the last five years by passing an entrance examination, which is a prerequisite for TE enrollment. However, the TEIs of this region managed to attract only 40 percent seats of their intake capacity during this

period (Directorate of Technical Education, M.S., 2018). Thus, the problems pertaining to awareness, attraction, inclusivity of diversity and providing expected services (Kamokoty *et al.*, 2015; Lakal *et al.*, 2018; Upadhayay and Vrat, 2017) do exist in the region. Marketing of institutions is noticed on TEIs budgetary documents only. Absorption of techno-graduates of this region in the job market is relatively very low as compared to other parts of India. Due to unavailability of an industrial corridor and with very few scattered small-scale enterprises in the region, the techno-graduates of the region have to travel to metro cities for their first job where they have to compete with comparatively higher talented techno-graduates of metro cities. Even if someone from this region secures a job, he or she has to wait for almost one year on an average for his/her first job. Many professionals and educationalists have discussed the challenges of service quality issues by suggesting theoretical and conceptual frameworks; however, they failed to focus on their practical implications and identifying proper measurement instruments (Abdullah, 2006), which are valuable in making strong estimates for growth and development in TE setting.

As per statistical figures manifested above in context to TE scenario, two issues have been identified in terms of quantitative (growth) and qualitative (development) pertaining to the TE scenario in the Khandesh region of India. Based on these issues, the research objectives of this study are formed as stated below.

Research objectives

Primarily, this study has been aimed to examine the service offerings of the TEIs situated in the Khandesh region, India, that govern the growth and development of TE with the following specific objectives:

- (1) To examine the students' perceived experience regarding the SMM offered by their TEIs wherein they are enrolled.
- (2) To evaluate the impact of SMM provided by their TEIs on their performance enhancement, satisfaction and referral act. To trace out the relationships between SMM as input and output of service delivery.
- (3) To propose a measurement model: SMM as input and output of the TE system.

Research questions

Research questions that are to be answered to achieve objectives are:

- RQ1.* How do SMM offered by TE institutions affect students' performance, satisfaction and referral act?
- RQ2.* Does any interrelation between SMM exist?
- RQ3.* Can integration of SMM as service input and output be drawn?

Service marketing mix (SMM), better known as a strategic marketing tool, is accountable for contesting and lining up service providers' strengths to satisfy their customers' needs. A literature review is committed to study the elements of SMM and its impact on customers' performance and behavioral intention. It is also intended to trace out the research gap regarding the utilization and implementation of SMM in an HTE setting.

Literature review

The literature review of this research study has followed a systematic literature review process that is conducted mainly through two steps (Manatos *et al.*, 2017). This constituted

an in-depth and wide search through online databases focusing on the keywords related to the topic and making a descriptive and content analysis based on the statistical methods and findings utilized in the literature.

Service marketing mix (SMM)

SMM is a set of controllable marketing tools that an organization uses to fulfill its marketing objectives to target the customer market to produce the desired response (Kotler, 2000). After the evolution in metaphor of higher education as service (Bringle and Hatcher, 2000; Maringe and Gibbs, 2008; Ng and Forbes, 2009) and students as customers (Clayson *et al.*, 2005; Kotler, 1972), SMM has become the fundamental part of service design for higher educational programs. For a successful marketing plan, right composition of SMM at right time is vital for targeting the desired market to fulfill the needs of students (Young, 2005) and fetching image and reputation for service providers (Blythe, 2008). In case of marketing, a physical product, traditionally a fundamental model comprising of 4Ps, product, price, place (distribution) and promotion, is well-known to the market as a product marketing mix (Blythe, 2008). McCarthy (1960) was the first to present an advanced version of 4Ps in a more simplified way, in the form of 7Ps, which included people, physical evidence and processes. Though the author believed them to be useful for managerial planning and decision making, he failed to create a significant impact in the service sector. Up to the 1980s, even though the 4Ps model gained popularity in terms of producing a strategic solution to the marketing problem, it remained the topic of a debate pertaining to its problems and limitations (Fisk *et al.*, 1993). It had been a topic of core discussions at AMA conference converging to services marketing. Since then, the need for extending 4Ps has been recognized in the context of service marketing. Considering the intangibility nature of service, the importance of customer participation and service delivery, Booms and Bitner (Booms and Bitner, 1981) in 1981 presented the 7Ps model, consisting the original 4Ps along with added Ps: process, people and physical evidence that were more appropriate for services marketing (Blythe, 2008), particularly for education marketing (Ng and Forbes, 2009). SMM elements that have been focused upon in the literature are exhibited in Table I.

Product (program). The “product” element in service marketing is intangible in nature. In the case of higher education context, it is referred to as a “program” offered by the service providers (institutions) to the students. Kotler and Fox (1995) expressed that the quality of program is a major differentiating factor for the service providers of higher education in students market. In TE context, engineering, pharmacy, management, etc., are considered as “programs” of higher education. Due to its intangible, inseparable, variable and perishable nature, it does not exist until the service providers (institutions) deliver it in the presence of the customers (students) (Gajic, 2012). In most of the cases, in India, the program is designed by the affiliating university, the TEs have less to work on it; however, its execution and delivery through an enriched curriculum is important to keep the interest of the students up. Gibbs and Knapp (2012) suggested wrapping of the program with more tangible, enhanced value-added facilities that keep students engaged. Program enrichment by valued-added services like project-based learning, innovative teaching techniques, add-on or certification courses, information and communication technology-based learning are effective in knowledge and skill enrichment (Parashar and Parashar, 2012). The students are awarded a certified degree (output of program), after attending and successful completion of program curriculum. This degree positions the image of students in the job market, which adds value to their curriculum vitae. Students after their successful completion of program may behave positively by expressing word-of-mouth, which can complement the reputation of the program (Hamid and Noor, 2013). Shay (2014) has mentioned the significance of program curriculum in minimizing underemployed graduate condition. Agarwala (2008) viewed program importance linked to students’ characteristics, intrinsic (interest in program) and

SN	SMM elements	Literature support
1	Program	
	Quality of life	Agarwala (2008), Kinzie <i>et al.</i> (2004), Leslie and Brinkman (1988)
	Job prospectus	Agarwala (2008), Lichtenstein <i>et al.</i> (2009)
	Talent and strength	Woolnough (1994), Lent <i>et al.</i> (2003)
	Entrepreneurship	Capstick <i>et al.</i> (2007)
2	Price	
	Cost of education	Khanna <i>et al.</i> (2014), Ravindran and Kalpana (2012), Sojkin <i>et al.</i> (2012)
3	Place	
	Location, distance and locality	Khanna <i>et al.</i> (2014), Maringe (2006), Paulsen (1990)
4	Promotion	
	Media advertisement	Khanna <i>et al.</i> (2014), Paulsen (1990)
	Banners and hoardings	Kamath and Sheena (2015)
	Website	Dawes and Brown (2002)
	Social media	Chauhan and Pillai (2013), Rani (2014), Vyas and Sharma (2013)
	Counselling visits	Dawes and Brown (2002), McGrath (2002)
	Educational fairs	McGrath (2002)
	Leaflet and brochure	Wilson <i>et al.</i> (2006), Dawes and Brown (2002)
	Sponsorships	O'Mahony and Garavan (2012)
	Publication/Publicity	Cavas <i>et al.</i> (2011)
5	People	
	Parents	Chapman (1981), Wang and Degol (2013)
	Siblings	Cerinsek <i>et al.</i> (2013)
	Relatives	Gajic (2012), Wadhwa (2016)
	Friends	Tripney, <i>et al.</i> (2010), Gajic (2012), Wadhwa (2016)
	Current-students	Hayes (2014), Borrego <i>et al.</i> (2018)
	Alumni	Abdullah and Saeid (2016), Hayes (2014)
	Schoolteachers	Maringe (2006)
	Institute staff	Wajeeh and Micceri (1997), Maringe (2006)
	Yourself	James <i>et al.</i> (1999), Ng <i>et al.</i> (2008), Briggs (2006)
6	Physical evidence	
	Infrastructure and technology	Mazzarol and Soutar (2002), Sayeda <i>et al.</i> (2010), Sakthivel and Raju (2006)
	Amenities and recreational	Sahu <i>et al.</i> (2013a, b), Deshmukh (2006)
	Library and computational	Jain <i>et al.</i> (2013), Gupta (2011), Deshmukh (2006), Sayeda <i>et al.</i> (2010)
	Recognition and gradation	Prasad and Bhar (2010),
	Sports and cultural	Sahu <i>et al.</i> (2008), Deshmukh (2006), Das and Mukherjee (2017)
	Campus life	Sakthivel (2007), Paswan and Ganesh (2009), Elliott and Healy (2001)
7	Process	
	Faculty and teaching-learning	Bhatia and Bhatia (2008), Narang (2012), Sohani and Sohani (2012)
	Campus placements	Gambhir <i>et al.</i> (2016), Khanna <i>et al.</i> (2014)
	Industry interactions	Pal Pandi <i>et al.</i> (2013), Bhatia and Bhatia (2008)
	Co-and extra-curricular activities	Jain <i>et al.</i> (2013), Sayeda <i>et al.</i> (2010)
	Safety and security services	Gambhir <i>et al.</i> (2016), Elliott and Healy (2001)
	Alumni interaction	Sayeda <i>et al.</i> (2010), Sahu <i>et al.</i> (2013a, b)
	Skills development programs	Mitra Debnath and Shankar (2012), Deshmukh (2006), Viswanadhan (2009)
	Research activities	Reddy <i>et al.</i> (2016), Sharma and Sharma (2015), Subbarao (2013)
	Finance and scholarship	Hossler and Gallagher (1987), Deshmukh (2006), Paswan and Ganesh (2009)
8	Prominence	
	Institutional image and reputation	Ravindran and Kalpana (2012), Singh (2013) Mourad (2011), Khanna <i>et al.</i> (2014)
	Age of institution	Pushkar <i>et al.</i> (2013), Sakthivel (2007)
9	Position	Mahajan and Golahit (2017c)
10	Placement	Enache (2011)
11	Productivity	Lovelock and Wright (1999)

Table I.
SMM elements in
context to HTE

extrinsic (benefits sought from the program) that affect their study choice. Gibbs and Knapp (2012) discussed core competencies, profitability, core and tangible offering and, notion of branding as the attributes of a program. That is why, most private universities, deemed-to-be-universities and autonomous institutions in India have now recognized the importance of distinctive and unique attributes of program curriculum in attracting future students and engaging existing students to remain competitive in privatization.

Price. The “price” element is concerned with the cost involved in availing educational service, usually relates to tuition fee, fee concessions, fee reimbursement, fee installments, educational loans, residential changes, food charges and day-to-day expenses. TEI’s service price refers to the cost associated with physical facilities, educational processes as well as marketing efforts. In the higher education market, pricing is an extremely sensitive mix that differentiates between brands, values and service offerings of the institutions in a competitive environment (Gibbs and Knapp, 2012), and also boosts managerial accountability and service performance (Maringe and Gibbs, 2008). Agarwal (2006) is of the opinion that pricing plays a limited role in the clearing of demand and supply in higher education due to its embarrassing economy. Kotler (1999) believed that a customer may pay more for a good skilled service. Some service markets perceive expensive service offers to have a greater value and vice versa (Helmsley-Brown and Foskett, 2001). The pricing strategy not only affects the revenue that a TEI derives from admissions fee but also conjointly affects student perceptions of value for money and service quality (Ivy, 2008). Several literature have focused on the importance of price element as the cost of education for the families (Ahier, 2000; Supiano, 2009). In the higher education context, most families are ready to bear a higher cost for high quality (Gajic, 2012); however in India, low family income, farmer families and family having female child (Singh, 2009), perceive “price” as first prima facie criteria to make the decision of selection of TE program. In India, the state governments control and fix the price (Assembly, 2015) for the programs offered by TEIs to ensure that fee charged by institutions are in accordance with the expenses made on educational services, are concern for equity (Agarwal, 2006) and are affordable to the common society. In addition, the Indian government has taken up majority of the “price” burden in terms of reimbursement of tuition fee to the students belonging to socially and economically backward class (Government of India, 2017). Thus, in terms of TE program, the pricing strategy in India is reliable and fit for the purpose, from students’ point of view.

Place. Place refers to providing access to the customers that is established through the service networks (Brassington and Pettitt, 2006) and ensures physio-geographical delivery of education services at right time and right place (Hannagan, 1992; Kotler and Fox, 1995). In TE setting, it is concerned with the location (distance) of the institution from home and also refers to the characteristics (locality) of the area in which it is situated (Gajic, 2012). It is measured in terms of convenience, suitability and approachability of the place of service delivery. A good locality surrounded by the transport connectivity, entertainment facilities, medical facilities, safe and secured, and cultured climate will attract prospective students. Further, place is also linked to the accessibility and connectivity to the in-campus classrooms, laboratories, amenities and residential rooms (Maringe, 2006). Institutions situated near to the pool of future students or their schools and colleges is advantageous in attracting them as a small distance of institution will be convenient for them (Hannagan, 1992). If the institution is not situated nearby catchment area, i.e. students market, then the institution must settle in a good attractive location surrounded by necessary amenities and facilities, otherwise, the institution will fail to absorb enrollments. Since India is a multilingual, multi-religious and multicultural country where, after every four miles the language changes, the place element has a prominent role in students’ decision of selecting

an institution. Accessibility to the infrastructure and facilities, safe and secured place of amenities and, residential issues are real concerns for the students, especially for females (Singh, 2009). For students, place may be an important concern with regard to the social digital locations of institutions (Khanna *et al.*, 2014) like social blogs, LinkedIn, Facebook, Skype or website (Kotler *et al.*, 2002) for addressing, interacting or sharing information with the other students or friends. Therefore, convenience, locality, safety and security and comfort are the important attributes of “place.”

Promotion. Promotion denotes communication sources to convey attributes of service to the existing as well as potential customers (Hannagan, 1992) to create a positive attitude on service offered (Gajic, 2012). In the case of HTE, communication is made with the influencers of the students as well as institutional stakeholders with whom the institution interacts (Shannon, 1996). A lot of literature has revealed the importance of personal selling, media advertising, sales promotion, public relations and publicity in promoting institutions (Armstrong and Lumsden, 2000; Gibbs and Knapp, 2012; Harris, 2009; Shannon, 1996). Promoting service is a complex phenomenon, which includes highlighting tangible assets, clarifying quality service performance and publicizing the experience of satisfied customers (Lovelock and Wright, 1999). With changing environment and technology, promotion is taking a new look as integrated marketing communication (Shannon, 1996). Most educational institutions use public relations than advertising (Kotler and Fox, 1995) as their main promotional tool. Interactive communication sources like educational fairs and counseling visits (personal selling) are effective in approaching potential students that allow institutions to demonstrate their service offerings and overcome their doubts by direct face-to-face interactions. Social media has been recently gaining popularity and has been found to be effective on the young generation (Chauhan and Pillai, 2013; Khanna *et al.*, 2014; Rutter *et al.*, 2016) in building the brand reputation of institutions, co-creating system of interactive communications and developing relationships with and within the stakeholders.

People. In the HTE context, people include management people, institutional staff, schoolteachers, parents, friends and the students themselves (future, present and former students). Kotler and Fox (1995) and Brassington and Pettitt (2006) are of the opinion that education services, like many other services, depend on both the people who deliver the service as well as people to whom service is delivered. In the HTE system, services as performances and people as performers (Berry, 1995) are crucial due to their motivation and influence associated with teaching, training, interaction and support required from pre-purchase (future students) to the post-purchase stage (alumni). As people’s emotions, performance and action vary up and down, and the level of consistency in service quality is not certain and is fluctuating (Hannagan, 1992). Therefore, establishing and promoting human interactions are crucial for initiating the “moment of truth” (Kotler *et al.*, 2009) and creating a positive “word-of-mouth” (Bruce and Edgington, 2008) for creating branding for the higher education system. Therefore, people involvement is a key factor for influencing students’ satisfaction and motivating them towards positive word-of-mouth for the institutions (Svoboda and Harantova, 2015).

Physical evidence. Physical evidence points out tangible environment that facilitates the performance of service delivery (Palmer, 2001). Kotler *et al.* (2002) recommend physical evidence such as building, infrastructure and furniture as an immediate clue for prospective students about the service provider’s identity. It also includes the availability of physical infrastructure such as; residential buildings (hostels), equipment, computational facilities, library facility, sports, canteen and other amenities. This element is physically visible (Mukherjee and Shivani, 2016) and along with infrastructure, it also points out physical evidence such as quality of faculty, supporting staff, alumni reputation and institutional

ranking or gradation. Delivering services without the presence of physical evidence is not possible for TEIs. Due to its tangible nature, all stakeholder response emotionally and physiologically ultimately affects their behavior. Many institutions engage in integrated and distinctive visual look to their physical infrastructure and facilities to facilitate reputation and reinforce the desired image through publicity brochures, advertising media (Lovelock and Wright, 1999) and social networks. Several service models recognize the unique characteristics of the physical environment which affect service quality (Jain *et al.*, 2013; Teeroovengadam *et al.*, 2016) and customers satisfaction (Kotler and Keller, 2006).

Process. It relates to the whole administrative system in which the service is delivered by the service providers and the service is acquired by the customers (Kotler *et al.*, 2002). It includes all activities starting from enrollment, teaching-learning, extra-curricular activities and the deployment (Kaplinsky and Morris, 2000). Educational processes like academic, non-academic as well as support activities are effective in students' engagement, inside and outside of the classrooms which fallouts to determine institutional performance (Harper and Quaye, 2009) and further purposefully enables engagement of diverse students (Kuh, 2009). Processes are very crucial in keeping the momentum forward to achieve academic and non-academic goals of the students as well as the institutions. Availability, accessibility and responsiveness are thus the key terms associated with service processes, which jointly affect the service quality and effectiveness of the institution. A service process that encourages student engagement through community learning, student-faculty collective research, service-learning, industrial internships and, sports and cultural events are tended to participate mentally rather than engaging students physically by realizing them about their responsibility toward activities (Kuh, 2009). These services contribute directly to the students' retention, engagement, persistence, attrition, performance, satisfaction and trustworthiness which directly are associated with institutional performance (Yorke and Longden, 2004).

Other elements of SMM. Extended SMM elements other than 7Ps are exhibited with literature support in Table I. There are several other Ps publicized in the literature relevant to the service industry. Enache (2011) exposed "placement" in terms of delivering knowledge to the students and making a place for the students in the labor market. Lovelock and Wright (1999) presented eighth P "productivity" as service output for efficient and effective services to add value for customers. Maringe (2006), Ivy and Naudé (2004) and Ivy (2008) described "prominence" as next extended SMM in the form of institutional reputation, which the authors believed the most significant in the selection of an institution. Some studies presented extended SSM "position" as a constitute of institutional image and reputation which are critical in customers buying behavior (Barich and Kotler, 1991) as well as in students retention and loyalty (Nguyen and LeBlanc, 2001). Further, Ho and Hung (2008) believed that creating a distinctive image in the eyes of competitors as well as customers is useful in market positioning and targeting. Reputation and image building are not created overnights, rather it is a prolonged and continuous movement centering on students' satisfaction, students' loyalty and students' placement in the job market (Lafuente-Ruiz-de-Sabando *et al.*, 2018). Several studies (Clemes *et al.*, 2007; Elsharnouby, 2015; Syed Alwi and Kitchen, 2014), have empirical evidence that institutional reputation/image is a significant contributor to students' satisfaction.

Service output elements

Performance (skills and knowledge). Kuh and Wallman (1986) identified knowledge and intellectual development along with social and personal development of the students as the outcome of the education system. Hartman and Schmidt (1995) believed that satisfaction of students is a multi-dimensional phenomenon affected by both; service providers' performance

in service delivery and students' perceptions towards the outcomes of that performance. Providing educational services that inculcate competitive knowledge and skills in students and make them ready for global competitive market is the responsibility of all stakeholders of HTE (Burlu *et al.*, 2012). Employability as a purpose of higher education (Sin *et al.*, 2019) accompanies skill and knowledge enhancement in subject skills (domain skills) and transferable skills (interpersonal attributes) that makes an individual more competitive in the job market. Such a performance determiner is discovered as the major predictor in selecting higher educational institution in India (Nyaribo *et al.*, 2012). In today's scenario, this service output of HTE is becoming prima facie requirement to enter the labor market (Blom and Saeki, 2011), ahead of a degree certificate. Today, HTE institutions are intended to furnish students' performance in terms of developing communication skills, thinking skills and creativity skills of their students and also are attentive to measure whole service activities for the extent of its fulfillment (Venkatraman, 2007). Saravanan (2009) describes soft skills as vital and Gokuladas (2010) exposed it as the most important predictor of employability while, Sahu *et al.* (2013a, b) referred it as distinctive interpersonal skills for capacity building that keeps the job market competitive. In India, there is a lot of evidence showing the unemployment scenario for techno-graduates is due to their deprived employability skills (Blom and Saeki, 2011). Unni (2016), referring to the Indian scenario, believed that there is no problem with demand and supply of techno-graduates as far as the quantity aspect is concerned, however, the situation is attributed due to the employability skill gap. Several employability skills are expected from techno-graduate students, the majority are related to soft skills and interpersonal skills (Finch *et al.*, 2013; Wickramasinghe and Perera, 2010). As per the report of Wheebox, soft and technical skills, interpersonal skills: leadership and team building, confidence level, general knowledge and intelligence quotient, stress management and idea generation are much in demand of Indian industries, however, Gokuladas (2010) identified them lacking in Indian techno-graduates. This kind of service output in terms of performance enhancement is important for the accumulation of national human capital (National Research Council, 2012). For this reason, measurement of service delivery linked to students' performance related to their skill and knowledge enhancement is vital in HTE. The need has been well recognized by Borden (1964), who proposed ten marketing mix, out of which nine mixes have connections with 7Ps, and "fact-finding and analysis," a tenth mix element have a marketing measurement approach (Quelch and Jocz, 2008) for evaluating performance and controlling service input mix. Beder (2009) mentioned that skills are not generated by TE curriculum, but are reliant on of institution's service facilities and capability and, therefore, performance measurement is important.

Satisfaction. If the institution identifies appropriate measurement tool for improving students' satisfaction, it can provide better services to its students, however, the main difficulty is to find out such a mechanism (Mahajan and Golahit, 2017c). Yelkur (2000) presented a conceptual model that linked the SMM as inputs with the satisfaction of the customers as an output of the HTE system. As rightly said by Kotler (2000) service delivery is successful when it delivers satisfaction to its customers. This state is felt by customers after experiencing value-added performance that accomplishes their expectations (Elliott and Healy, 2001; Kotler and Clarke, 1987). Quite a lot of literatures on service quality models have highlighted importance of customers' satisfaction (Hanaysha *et al.*, 2011; Sakthivel *et al.*, 2005), arising due to the skill and knowledge enhancement as performance (Singh and Khanduja, 2010) and its measurement (Sirvanci, 2004) in HTE setting.

Loyalty and recommendations. In the service industry, most of the future business comes from the existing or experienced customers after experiencing service delivery. For that reason, Mahajan and Golahit (2017a) perceive pointing-out, i.e. willingness to refer experienced and known services to others is important in growing the enrollments and have

stated it as an extended P in TE setting. Studies like, Santini *et al.* (2017) and Paswan and Ganesh (2009) have revealed the significant impact of satisfaction due to skill gained during the study (Bruce and Edgington, 2008; Greenacre *et al.*, 2014). This further affects students behavioral act of recommendation (de Castro and de Guzman, 2014), loyalty (Annamdevula and Bellamkonda, 2016a, b; Hackl and Westlund, 2000; Thomas, 2011) and word-of-mouth (Alves and Raposo, 2007) for assisting future students.

SMM as service input and service output

Tijiang *et al.* (2017) have presented SMM as input to the education system and satisfaction of students as an output of the system with mediators; students' decision-making and service quality provided by the institutions. The findings of the study revealed that SMM affects satisfaction with the involvement of mediators such as students' decision-making and service quality. Yelkur (2000) proposed a model that suggested the linkage of SMM (input) on the customer's perceptions and feelings (output) of the service delivery. Chumaidiyah (2014) connected 7Ps to create competitive advantage through a structural diagram. The results revealed that product, price, place, promotion, people, physical evidence and process have a different effect on competitive advantage. Cengiz and Yayla (2007) presented the 4Ps model that the author linked to customer satisfaction and customer loyalty. Hiransomboon (2012) presented the 7Ps model that assists tourists for making their decision of buying accommodation services. Melewar and Saunders (2000) displayed Ps with extended version to trace out its impact on the corporate visual identity of companies. Almost all-earlier literature considered SMM elements as input to the service system to measure its impact on the service output. However, all output elements in the literature have been exposed as a separate entity of service delivery and not a part of the SMM group.

Research gap

Past literature mainly offered the conceptual framework on SMM without sufficient support for empirical research. Martin (2009) believed that traditional Ps have limited orientation based on the assumption; "one size fits all." The traditional 7Ps are not suitable to capture the distinctiveness of marketing in higher education and strongly needs further research work based on its application (Ivy, 2008) as well as further requires conceptual and contextual integration (Lim *et al.*, 2018).

Previous studies utilized SMM for examining marketing performance and branding but found to be lacking in emphasizing the role of SMM in customer satisfaction, service performance and service recommendations. Performance in terms of the skills and knowledge earned by the students during education, satisfaction in terms of service offerings, performance and act of recommending the institute to others shall be examined for the overall growth and development of TE service system. It is equally important to analysis their intermediate correlation also.

Almost all existing literature on SMM have focused its significance as an input to the service industry. Traditional Ps of SMM have been considered as internal factors that are controlled by and favorable for service providers than their customers. As the principal focus of SMM is to satisfy customer needs and wants (Kushwaha and Agrawal, 2015), there are various SMM elements, in terms of customer-oriented behavior arising due to service delivery experience (service output), that are yet to be explored. There is a need for integrating SMM as service input and service output in terms of customers' orientation. Thus, the measurement of input (service provider's orientation) and output (customer's orientation) of the system is even important in reframing inputs provided by service providers. Secondly, if the Ps are not presented as the output of the service system, they cannot take customer orientation, the need of which is desperately felt by Kotler (2003).

Conceptual framework and the hypothetical model

Based on objectives, research questions and the research gap identified, following are the hypotheses that are to be validated through the proposed hypothetical model (Figure 1) based on the students’ perceived experience.

Research hypotheses

Based on literature review and research objectives, following Hypotheses (H_{01} , H_{02} , H_{03}) suggesting no relationships between variables of SMM are proposed. An alternative hypotheses (H_1 , H_2 , H_3) will be accepted in case null hypothesis is rejected (Creswell, 2012a, b):

- H_{01} . There is no significant relationship between the students’ perceptions on SMM and their performance in terms of skill and knowledge enhancement.
- H_{02} . There is no significant relationship between the students’ perceptions on performance in terms of skill and knowledge enhancement and their satisfaction and referral act.
- H_{03} . There is no significant relationship between the students’ perceptions on SMM and their satisfaction and referral act.

Research methodology

This study is marketing research pertaining to HTE issues with an objective to study relationships in between SMM offered by the institutions and service output in terms of performance as skill and knowledge enhancement, satisfaction and referral act perceived by the students. The study is also aimed to propose a measurement model that links traditional SMM as input with new emerging SMM as an output of the TE system that uplifts the growth and development of TE in the region. Based on the research objectives the research method is discussed below.

Research design

As suggested by Creswell (2012a, b), the decision of selecting research method is made based on a review of literature and objective of this study. This study has implemented

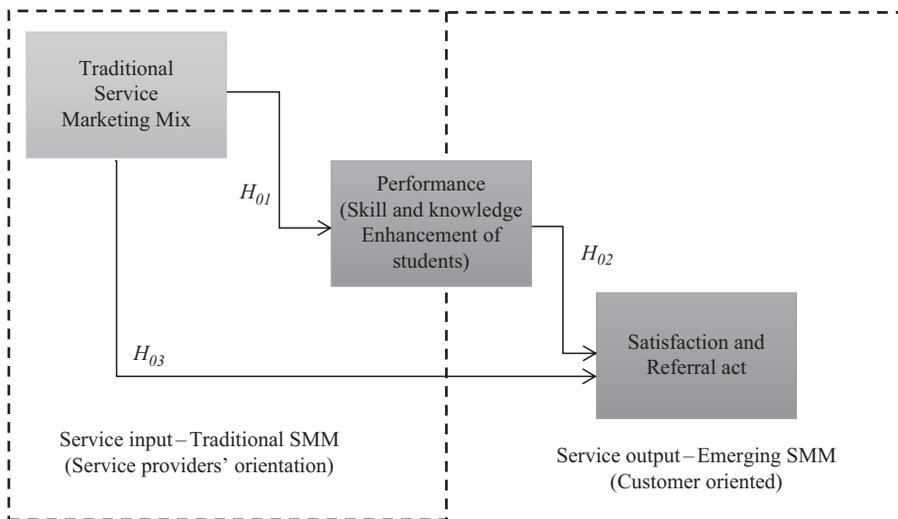


Figure 1. Conceptual framework, hypothetical model and hypotheses

Source: Compiled by own from literature review

quantitative research method due to its ability in formulating hypothesis (Kotler *et al.*, 2016), to perform multivariate statistical techniques on large data (Donald *et al.*, 2010; Hossler, 1999), to test relationships in between various variables with definiteness and transparency (Borrego *et al.*, 2009), and being popular and successful in educational research (Han, 2014; Sheppard *et al.*, 2010; Tight, 2015). Further, a survey method is administered for its quantitative ability to be counted and having the advantage of allowing a large number of responses quickly (Kolb, 2008). To make availability of students from their busy academic schedule and avoiding favoritism that arises while obtaining existing students' opinions in their own institutional campus is a challenging task. To overcome this situation, a self-administered survey through an internet-Google-form tool has been considered. Internet survey is speedy, low in cost and college respondents are more responsive to such surveys (Neuman, 2014). Sample size ranging from 370 to 381 is recommended for a population ranging from 10,000 to 50,000 at 95% confidence level and 5 percent of significance level (Cohen *et al.*, 2011; Creswell, 2012b; Oakland, 1953; Krejcie and Morgan, 1970). However, as sampling error decreases when sampling size increases, this study accepted 682 (> 381) responses that received from an online survey. For TE intake capacity of 6,260 seats for the region, the ratio of sampling size to population size comes out to be 10.9 percent.

Data collection

What the customer actually receives from the service delivery as against his/her expectations from service is typically based on a customer's judgment or evaluation of the service (Yelkur, 2000). This is why students' perceptions (primary customer) that are crucial factor in the delivery of educational service are taken into consideration. A structured closed-ended questionnaire as presented in the Appendix was constructed as per the guidelines suggested by Cohen *et al.* (2011) and Neuman (2014). Based on literature review on SMM elements as presented in Table I, it consists of items on the perceived experience of students applied with Likert-Scale (1–5). Respondents were the students who were enrolled either in First, second, third or final year study belonging to TEIs located in the Khandesh region of India. A questionnaire is initiated with asking demographic and geographic characteristics of students in Part-I, while in Part-II it encompasses perceptions on program benefits and self-motives. Role of human influences in their TE career has been questioned in Part-III. Perceived experience on the institutional characteristics in terms of cost of education, location and distance, institution age, and image and reputation has been questioned in Part-IV. Part-V comprises institutional marketing communication activities, and Part-VI covers questions on ratings on the physical facilities and educational processes provided by their TEIs wherein they are enrolled. This questionnaire has also measured service outcome element, skill and knowledge enhancement in Part-VII and other service output elements, students' satisfaction and their referral act in Part-VIII. After taking a pilot study on the few samples from a sampling frame belonging to the Khandesh region, the questionnaire has been finalized for conducting a survey. In total 53 item scales variables together have established this questionnaire which is continuous in nature. After providing sampling frame containing the list of TEIs (simple random sampling) to the affiliating university of this region, the university on researcher's request provided approximately 6,600 e-mail IDs of students who were currently availing their TE study in December 2017. After initial screening for duplicate e-mail IDs and the bounce effect due to invalid e-mail addresses, the survey got a hold of approximately 5,500 e-mail IDs. Finally, primary data consisted of 682 responses which were directly received on researcher's Google account at the end of February 2018, with a response rate of 12.4 percent. There were 466 male and 216 female students by gender. Based on the geographic, 165 (24.2 percent) students belonged to the district native place, 285 (41.8 percent) from taluka place and 232 (34 percent) were from village place. There were 76 percent of respondents belonged to the family having an annual

income less than Rs. 3 lacs. In total, 73.8 percent of the respondents were availing engineering degree program while 17.6 and 8.5 percent students were studying in pharmacy and management degree program, respectively. In total, 50.4 percent students were studying in the first or second year (juniors) while 40.6 percent were enrolled in the third or final year (seniors) of their program.

Data analysis and findings

To test the relationships between SMM as input and service output, structural equation modeling (SEM) has been adopted. Since last decade, SEM has been successful for the researchers and is popular in the field of psychology, sociology, education (Green, 2016) and economics due to its ability to measure unobserved variables (latent variables) and examining its relationship with the observed variables (indicator variables). SEM identifies a structural relationship among the latent variables with measurement errors (Bollen and Long, 1992). Out of received 682 responses, 642 responses without any missing data are considered for running SEM. Scales items are treated with a scale reduction technique performed by SPSS, the factor loadings of each item to the items are shown in Table II. To develop a valid and reliable scale for each construct and their relationships, exploratory factor analysis (EFA) is performed (Guay *et al.*, 2015). EFA is first implemented to develop item scales, followed by confirmatory factor analysis (CFA) (Worthington and Whittaker, 2006). EFA is confirmed the covariance or correlations between a set of observed variables (indicators) and unobserved constructs (latent variables). The SEM generally undergoes five steps: model specification, model and parameter identification, parameter estimation, model evaluation or model fit and modifications (if required) (Teo *et al.*, 2013). SEM, a measurement model, is executed as per the guidelines suggested by Hair *et al.* (2011) and Parasuraman *et al.* (2005). Measurement model that is executed through SPSS AMOS is exhibited in Figure 2. The SEM model has presented a combination of path models and confirmatory factor models that incorporated both latent and observed variables (Kaplan, 2008). All scales under study are empirically tested for reliability and validity using both EFA and CFA.

Content validity

According to Straub (1989), content validity is to ensure that the scale items are representative and comprehensive towards formulated hypothesis. The scale items under study are collected from the intensive analysis of the literature (Table I). The scale is designed by considering AICTE regulating norms and accreditation concerns for TEIs. Educational experts like academic and administrative deans and principals of TEIs confirmed 53 scales to be valid after reviewing the scales.

Reliability

Before conducting CFA analysis, items of the measurement scale are determined by computation of item-to-total correlations and Cronbach's α coefficient (Churchill, 1979). The principal component method with Varimax rotation is utilized to include as many factors for easy identification of constructs and to avoid multiple loadings on the constructs (Rennie, 1997). The EFA is executed by SPSS, for automatically calculating the number of factors to be extracted, with specifying suppression value under 0.33 (Ho, 2014). Item-to-total correlations for all 53 scales were > 0.33 , suggesting no need for scale modifications (Nunnally and Bernstein, 1967). The internal consistency reliability, i.e., stability of individual component across its group of similar scales (Cronbach's α) for six extracted components were noticed ranging from 0.826 to 0.979 which were above 0.6 and, hence, accepted (Nunnally and Bernstein, 1967). In case of third extracted Component C, where the Cronbach's α would have been 0.952 instead of 0.948, if the scale item, location and distance

Table II.
Exploratory factor
analysis (EFA) with
reliability and
validity test

Service mix elements	Code	Item-total correlation	α if deleted	Components extracted from factor analysis						
				A	B	C	D	E	F	
Recognition and graduation	PHF4	0.889	0.823	0.794						
Research activities	PRO8	0.870	0.804	0.793						
Co- and extra-curricular	PRO4	0.869	0.794	0.786						
Industry interactions	PRO3	0.867	0.811	0.771						
Safety and security	PRO5	0.859	0.79	0.770						
Library and computational	PHF3	0.878	0.788	0.759						
Campus placements	PRO2	0.872	0.821	0.754						
Sports and cultural	PHF5	0.810	0.751	0.750						
Alumni interaction	PRO6	0.863	0.766	0.747						
Soft and technical skills	PRO7	0.883	0.813	0.746						
Amenities and recreational	PHF2	0.881	0.805	0.735						
Finance and scholarships	PRO9	0.807	0.694	0.728						
Faculty and teach.-learning	PRO1	0.859	0.833	0.681						
Campus life	PHF6	0.863	0.766	0.675						
Infrastructure and techno.	PHF1	0.817	0.767	0.651						
Creativity	PER9	0.901	0.971		0.778					
Stress handling	PER8	0.851	0.973		0.755					
Confidence level	PER7	0.895	0.971		0.737					
Hardworking ability	PER10	0.846	0.973		0.723					
Leadership	PER6	0.870	0.972		0.715					
Team development	PER5	0.904	0.971		0.705					
Intelligence quotient	PER2	0.897	0.971		0.704					
Technical skills	PER3	0.885	0.971		0.703					
Soft skills	PER4	0.886	0.971		0.675					
General knowledge	PER1	0.841	0.973		0.649					
Banners and hoardings	MAR2	0.800	0.939			0.796				
Website	MAR3	0.840	0.938			0.773				
Social media	MAR4	0.835	0.938			0.751				
Leaflet and brochure	MAR7	0.839	0.938			0.748				
Media advertisement	MAR1	0.752	0.942			0.738				
Sponsorships	MAR8	0.810	0.939			0.730				

(continued)

Service mix elements	Code	Item-total correlation	α if deleted	Components extracted from factor analysis					
				A	B	C	D	E	F
Educational fairs	MAR6	0.816	0.939			0.712			
News publication	MAR9	0.782	0.940			0.690			
Counselling visits	MAR5	0.767	0.941			0.676			
Location-distance	CHT1	0.520	0.952			0.417			
Alumni	INF6	0.768	0.894				0.787		
Current-Students	INF5	0.762	0.895				0.759		
Schoolteachers	INF7	0.732	0.897				0.753		
TEI staff	INF8	0.726	0.898				0.731		
Friends	INF4	0.726	0.898				0.723		
Relatives	INF3	0.683	0.902				0.683		
Siblings	INF2	0.675	0.902				0.606		
Parents	INF1	0.616	0.907				0.476		
Quality of life	MOT2	0.800	0.883					0.784	
Jobs and career	MOT1	0.773	0.886					0.766	
Talent and strengths	MOT3	0.792	0.884					0.752	
Image and reputation	CHT3	0.733	0.889					0.536	
Yourself (self-motives)	INF9	0.677	0.894					0.530	
Entrepreneurship	MOT4	0.572	0.904					0.517	
Age of TEI	CHT4	0.718	0.891					0.446	
Cost of education	CHT2	0.531	0.908					0.360	
Referral Act	REFR	0.704	—						0.890
Satisfaction	SATS	0.704	—						0.875
Eigenvalue				27.3	4.06	2.47	1.98	1.54	1.41
% Variance (Cumulative)				22.1	36.1	49.8	60.3	69.7	73.19
Spearman-brown coefficient				0.98	0.95	0.81	0.84	0.93	0.83
Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO)						0.974	> 0.5		
Bartlett's Test of Sphericity				$\chi^2 = 36937.961$	$df = 1378$	$p = 0.000$	(< 0.001)		
Cronbach's α based on Standardized Items (and no. of scales accounting for component formation)				0.979	0.974	0.946	0.911	0.906	0.826
				$N = 15$	$N = 10$	$N = 10$	$N = 08$	$N = 08$	$N = 02$

Notes: Dimension reduction by extraction method: principal component analysis (PCA); Rotation Method: Varimax with Kaiser Normalization; Rotation converged in eight iterations

Source: SPSS

Table II.

Component A: Physical Evidence+Processes
 Component B: Performance
 Component C: Promotion+Place
 Component D: People
 Component E: Program + Price + Prominence
 Component F: Pleasure + Pointing-out

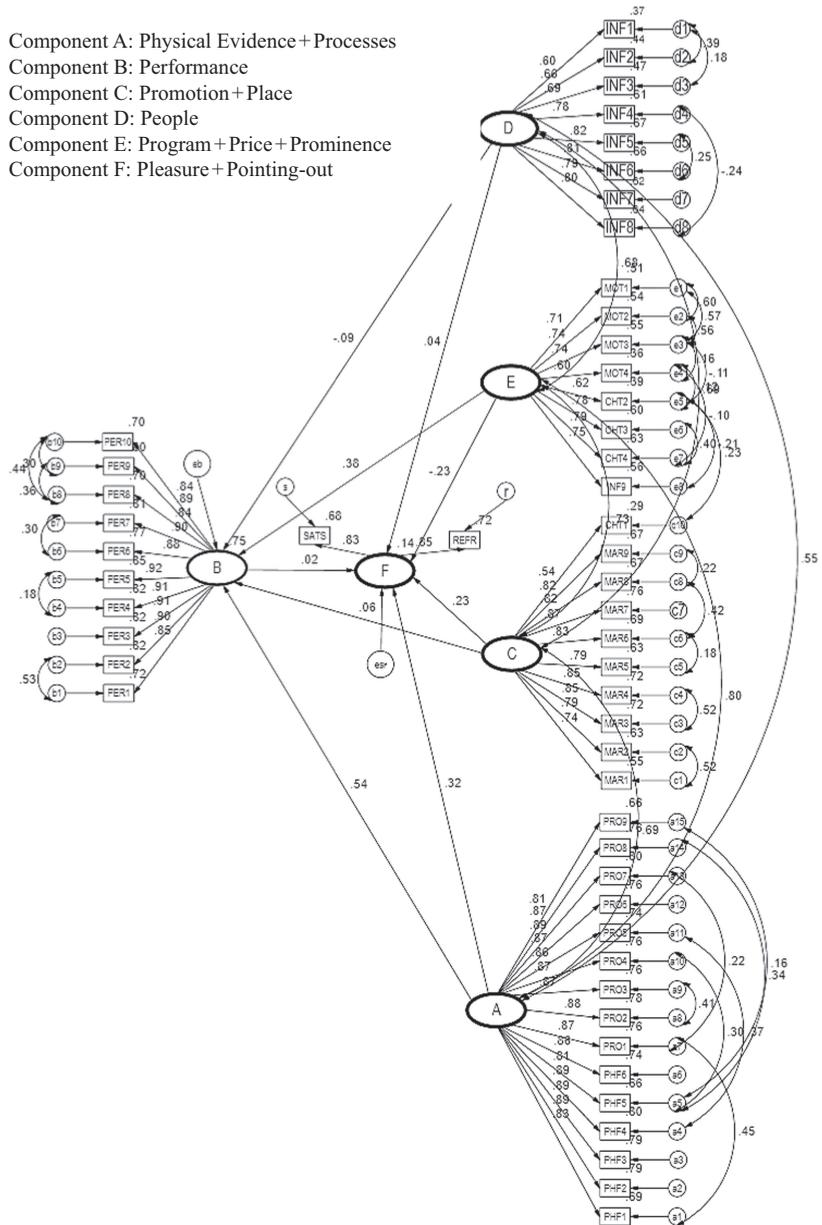


Figure 2.
Final measurement
model obtained
by SEM

Source: SPSS AMOS

of TEI (CHT1) had been deleted from the group. However, due to its importance mentioned in literature (content validity), this scale item has been retained. Internal consistency is also tested by the split half technique (Ho, 2014), which showed higher correlation with Spearman-Brown coefficient for all scale items ranged between 0.811 to 0.976 and noticed above the requirement level. Table II shows the results of factor analysis and related

reliability tests. All 53 scale items exhibited a high level of potential for being factorized, with a Kaiser-Meyer-Olkin (KMO) statistic of value 0.973 (> 0.5) and significant results pertaining to Bartlett's test of sphericity ($\rho = 0.000 < 0.001$ with $\chi^2 = 36,937.961$, $df = 1378$) that symbolizes worthy sign of adequacy for factor analysis (Cerny and Kaiser, Henry, 1977). Floyd and Widaman (1995) recommend sample size ten times greater than the scales to be measured. In this case adequacy of sample size sounds good as the study has undertaken a sample of 642 and 53 scales (ratio > 10). The test suggested that the sampling adequacy is good with all scale constructs suitable for factor analysis.

Construct validity

Validity of data relates to the extent to which the scale items correlate positively to the other similar scale under the same component. Validity refers specifically to convergent and discriminant validity within and between scale item sets, respectively. To affirm convergent validity, scales must load strongly and significantly in the hypothesized direction (Green, 2016). According to Ho (2014), for the inclusivity of a scale into a component of a similar construct, factor loadings above 0.4 are recommendable. Factor loading on the 53 item scales showed that all scales are a good construct of a similar component. There are 42 scales that have factor-loading ranging from 0.9 to 0.7, ten item scales ranged in between 0.7 to 0.4 and 1 item scale that is cost of education (CHT2) having factor loading of 0.360 (refer Table II). Hair *et al.* (2011) have recommended factor loadings 0.3 and above for a sample size of 350 respondents. Here sample size $N = 642$ is well above the requirement. Second, due the importance of its content validity, cost of education has been retained even if it carried low factor loading. Critical ratios of all scale items obtained by the CFA showed values above 1.96 at $p < 0.05$, which confirmed strong convergent validity (Wong and Merrilees, 2007). Second, average variance extracted (AVE) computed for each construct obtained by EFA showed a value above 0.5 and composite reliability values were found between 0.6 to 0.9 which suggested good convergent validity (Hair *et al.*, 2011). To test discriminant validity, cross loadings of the 53 scales were analyzed on the six constructs (in between the components) to test factor loading above 0.4 for more than one scale across the components. However, no factor loadings above 0.4 were found across the constructs for the same item scales. Discriminant validity was also confirmed by involving pairwise (two constructs at a time) scales to perform PCA, which showed the extraction of two components (constructs) for every pair of constructs (Sultan and Yin Wong, 2012). This procedure demonstrated sound discriminant validity between all pairs of constructs.

Scale reduction and component extraction

Six components are extracted from 53 item scales constituted on SMM elements which accounted for 73.19 percent of variance that exhibited eigenvalue 1.415 (above 1.0). Labeling of Components A, B, C, D, E and F are based on the type of scale items it encloses and its relevance to the reviewed literature as presented in Table I. Components A, C, D and E are illustrative of traditional SMM that is considered as service input mix, while Components B and F are customers' behavioral outcome (service output) of service delivery symbolize new emerging SMM.

Component A. The first latent (construct) variable, Component A, accounted for 22.12 percent of the variance and has emerged from 15 observed variables in total with Cronbach's $\alpha = 0.979$. Wherein, six observed variables are related to the "physical evidence" element of service mix (scale item PHF1 to PHF6) and nine are associated with the "process" element of mix (scale items PRO1 to PRO9). Thus this Component A is identified as "Physical Evidence+Processes."

Component B. The second latent variable is the outcome of ten observed variables accounted for 13.99 percent of variance with Cronbach's $\alpha = 0.974$. It is concerned with the skill and knowledge enhancement (scale items PER1–PER10) of students and is termed as "Performance."

Component C. The third latent comprises 13.75 percent of variance with Cronbach's $\alpha = 0.946$, and is the product of ten observed variables, out of which nine variables are associated with "promotion" mix (MAR1 to MAR9) and one variable is linked with "place" mix (scale item CHT1). This component is labeled as "Promotion+Place."

Component D. The fourth extracted component is derived from eight observed variables accounting 10.44 percent of variance with Cronbach's $\alpha = 0.911$. It consists eight human influencers (scale items INF1 to INF8) and is acknowledged as "People."

Component E. The fifth component shows 9.4 percent of variance with Cronbach's $\alpha = 0.906$ resulting from eight observed variables. Five-item scales out of eight are symbolizing perceptions towards TE program benefits (scale items MOT1 to MOT4) and self-motive for program (scale item INF9), and are categorized as "program." One item scale refers the cost of education (scale item CHT2) signifying "price" element of mix. Last two elements, image and reputation (scale item CHT3), and age of institution (scale item CHT4) are suggesting towards the extended element of mix "prominence." Altogether the fifth component houses eight observed variables that can be described as "Program+Price+Prominence."

Component F. The sixth component exhibited 3.49 percent of variance with Cronbach's $\alpha = 0.826$ is an outcome of two observed variables satisfaction (scale item SATS) and referral act (scale item REFR). Satisfaction is named as "pleasure", and referral act is labeled as "pointing-out." The whole component, thus, is referred to as "Pleasure+Pointing-out." This component is expressing new emerging Ps, Pleasure (satisfaction) and Pointing-out (referral act).

Model specification

As per the guiding principles of Baxter *et al.* (2008) on implementing SEM, paths are drawn to distinguish relationships among variables based on the conceptual hypothetical model through SPSS AMOS. One directional arrow represents the relationships (factor loadings) between the observed indicators and extracted latent variables. Components A, C, D and E are connected by the two-way directions of arrow reflecting relationships (correlation) between latent variables (called path coefficients), which are exogenous by nature. Covariance exists because of hypothesized relationships (correlations) among the latent variables. On the other hand, Component B and Component F are endogenous and reliant on Components A, C, D and E, and are connected by a one-way arrow. Variances are estimated for indicator errors associated with the observed variables and the errors associated with the endogenous variables (dependent). Overall, there are 114 total variables in the model with 53 observed variables (measured) and 61 unobserved variables (latent). There are 59 exogenous (independent) variables and 55 endogenous (dependent) variables in the measurement model (refer Figure 2).

Model identification and estimation

Model estimation involves the determination of the value of the unknown parameters (pathways) and the error is associated with the estimated value. Maximum Likelihood estimation method (Green, 2016; Iacobucci, 2010) is selected and AMOS automatically displayed the estimations for all pathways presented in the model with standardized as well as unstandardized estimates, which are presented in Table III.

Referring to Table III, variances between the scale items and concerned latent constructs demonstrate strong accountability of scale items toward its latent constructs with

<i>Component A (physical evidence + processes)</i>					
Relationship	SRW	RW	SE	CR	p-value
PRO9 ← A	0.81	1.00	—	—	—
PRO8 ← A	0.87	1.06	0.04	27.38	***
PRO7 ← A	0.89	1.08	0.04	28.49	***
PRO6 ← A	0.87	1.07	0.04	27.50	***
PRO5 ← A	0.86	1.06	0.04	26.87	***
PRO4 ← A	0.87	1.07	0.04	27.46	***
PRO3 ← A	0.87	1.05	0.04	27.26	***
PRO2 ← A	0.88	1.09	0.04	27.74	***
PRO1 ← A	0.87	1.02	0.04	27.24	***
PHF6 ← A	0.86	1.07	0.04	26.90	***
PHF5 ← A	0.81	1.01	0.04	26.74	***
PHF4 ← A	0.89	1.07	0.04	28.40	***
PHF3 ← A	0.89	1.08	0.04	28.28	***
PHF2 ← A	0.89	1.03	0.04	28.28	***
PHF1 ← A	0.83	0.98	0.04	25.44	***
<i>Component B (Performance)</i>					
Relationship	SRW	RW	SE	CR	p-value
PER1 ← B	0.85	1.00	—	—	—
PER2 ← B	0.90	1.06	0.02	45.69	***
PER3 ← B	0.91	1.03	0.03	31.91	***
PER4 ← B	0.91	1.06	0.03	31.99	***
PER5 ← B	0.92	1.08	0.03	32.95	***
PER6 ← B	0.88	1.05	0.03	30.06	***
PER7 ← B	0.90	1.07	0.03	31.43	***
PER8 ← B	0.84	0.99	0.04	27.44	***
PER9 ← B	0.89	1.05	0.03	31.06	***
PER10 ← B	0.84	0.98	0.04	27.59	***
<i>Component C (promotion + place)</i>					
Relationship	SRW	RW	SE	CR	p-value
MAR9 ← C	0.82	1.00	—	—	—
MAR8 ← C	0.82	0.98	0.04	27.85	***
MAR7 ← C	0.87	1.03	0.04	27.07	***
MAR6 ← C	0.83	0.98	0.04	25.09	***
MAR5 ← C	0.79	0.97	0.04	23.31	***
MAR4 ← C	0.85	1.01	0.04	25.56	***
MAR3 ← C	0.85	1.01	0.04	25.63	***
MAR2 ← C	0.79	0.92	0.04	23.26	***
MAR1 ← C	0.74	0.85	0.04	21.24	***
CHT1 ← C	0.54	0.65	0.05	14.32	***
<i>Component D (People)</i>					
Relationship	SRW	RW	SE	CR	p-value
INF1 ← D	0.60	1.00	—	—	—
INF2 ← D	0.66	1.11	0.06	17.85	***
INF3 ← D	0.69	1.07	0.07	15.83	***
INF4 ← D	0.78	1.27	0.08	15.51	***
INF5 ← D	0.82	1.34	0.08	15.83	***
INF6 ← D	0.81	1.29	0.08	15.78	***
INF7 ← D	0.79	1.24	0.08	15.57	***
INF8 ← D	0.80	1.36	0.09	15.72	***
<i>Component E (program + price + prominence)</i>					
Relationship	SRW	RW	SE	CR	p-value
MOT1 ← E	0.71	1.00	—	—	—

Table III.
Variance and internal consistency (loading of observed variables on latent variables)
(continued)

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MOT3← E	0.74	1.01	0.04	27.16	***
MOT4← E	0.60	0.87	0.06	14.42	***
CHT2← E	0.62	0.91	0.06	14.46	***
CHT3← E	0.78	1.11	0.06	18.36	***
CHT4← E	0.79	1.13	0.06	18.61	***
INF9← E	0.75	1.08	0.06	18.04	***
MOT2← E	0.74	1.03	0.04	28.10	***

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<i>Component F</i> (pleasure + pointing-out)					
Relationship	SRW	RW	SE	CR	<i>p</i> -value
SATS←F	0.827	1.00	—	—	—
REFR←F	0.851	1.40	0.15	9.33	***
Component	RW	SE	CR	<i>p</i> -value	
A	1.5935	0.1279	12.4614	***	
C	1.7381	0.1397	12.4403	***	
D	0.9280	0.1142	8.1249	***	
E	1.1415	0.1141	10.0028	***	

Notes: Relationship: observed variable and latent variable, SRW, Standardized regression weights; RW, regression weights; SE, standard error; CR, critical ratio. ****p*-value < 0.001

Source: SEM performed by SPSS AMOS

Table III.

standardized estimates ranging from 0.90 to 0.60 suggesting a strong belonging resulting statistical significance with CR ranging from 9.33 to 45.69 ($p < 0.001$). All exogenous Components A, C, D and E are assembled well with CR ranging from 8.12 to 12.46 ($p < 0.001$). Referring to Table IV, covariance path between the latent constructs shows a strong relationship with standardized path coefficients ranging from 0.5467 to 0.8046. Highest path coefficient, i.e., correlation is found for Physical Evidence+Process and Program+Price+Prominence ($\beta = 0.8046$, CR = 12.30), and the lowest correlation is observed in between Physical Evidence+Process and People ($\beta = 0.5467$, CR = 9.37).

Referring to Table V, latent construct, Performance, has direct impact due to Physical Evidence+Processes ($\beta = 0.5388$), Promotion+Place ($\beta = 0.0644$), People ($\beta = -0.0858$) and Program+Price+Prominence ($\beta = 0.3768$). Observed variable, Pleasure, has indirect effect because of Physical Evidence+Processes ($\beta = 0.2724$), Performance ($\beta = 0.0163$), Promotion+Place ($\beta = 0.1943$), People ($\beta = 0.0276$), Program+Price+Prominence ($\beta = -0.1833$) and direct effect due to Pleasure+Pointing-out ($\beta = 0.8272$). Similarly, observed variable, pointing-out, has indirect effect because of Physical Evidence+Processes

Latent variables		β	B	CR	<i>p</i> < 0.001
<i>Component A</i> (Physical Evidence+Process)	↔ <i>Component C</i> (Promotion+Place)	0.6893	1.1472	12.2341	***
<i>Component A</i> (Physical Evidence+Process)	↔ <i>Component E</i> (Program +Price+Prominence)	0.8046	1.0852	12.3062	***
<i>Component A</i> (Physical Evidence+Process)	↔ <i>Component D</i> (People)	0.5467	0.6649	9.3799	***
<i>Component C</i> (Promotion+Place)	↔ <i>Component E</i> (Program+Price+Prominence)	0.7296	1.0278	11.7387	***
<i>Component C</i> (Promotion+Place)	↔ <i>Component D</i> (People)	0.6873	0.8729	10.4608	***
<i>Component D</i> (People)	↔ <i>Component E</i> (Program+Price+Prominence)	0.6838	0.7038	9.8555	***

Table IV.
Correlations and covariance estimates between the latent constructs

Notes: β : correlation estimate; B, covariance estimate; CR, critical ratio

Latent construct	Component	Physical Evidence + Processes A	Performance B	Promotion + Place C	People D	Program + Price + Prominence E	Pleasure + Pointing-Out F
<i>Component B</i>	Indirect	–	–	–	–	–	–
Performance	Direct	0.5388	–	0.0644	–0.0858	0.3768	–
	Total	0.5388	–	0.0644	–0.0858	0.3768	–
Pleasure	Indirect	0.2724	0.0163	0.1943	0.0276	–0.1833	–
	Direct	–	–	–	–	–	0.8272
	Total	0.2724	0.0163	0.1943	0.0276	–0.1833	0.8272
Ponting-Out	Indirect	0.2801	0.0168	0.1998	0.0283	–0.1885	–
	Direct	–	–	–	–	–	0.8572
	Total	0.2801	0.0168	0.1998	0.0283	–0.1885	0.8572
<i>Component F</i>	Indirect	0.0106	–	0.013	–0.0017	0.0074	–
Pleasure +	Direct	0.3187	0.0197	0.2336	0.0350	–0.2290	–
Pointing-out	Total	0.3293	0.0197	0.2349	0.0333	–0.2216	–

Note: Cell contains correlation estimate (β)

Table V.
Direct and indirect effect on the latent constructs

($\beta = 0.2801$), Performance ($\beta = 0.0168$), Promotion+Place ($\beta = 0.1998$), People ($\beta = 0.0283$), Program+Price+Prominence ($\beta = -0.1885$) and direct effect due to Pleasure+Pointing-out ($\beta = 0.8572$). Pleasure+Pointing-out, as a combined construct, has both direct and indirect effect accounting due to Physical Evidence+Processes (β ; total = 0.3293, indirect = 0.0106, direct = 0.3187), Performance (β ; total = 0.0197, indirect = 0.0197), Promotion+Place (β ; total = 0.2349, indirect = 0.013, direct = 0.2336), People (β ; total = 0.0333, indirect = –0.0017, direct = 0.350) and Program+Price+Prominence (β ; total = –0.2216, indirect = 0.0074, direct = –0.2290).

Model fit

It is necessary to examine the hypothesized model by comparing it to the measurement model by observing the extent to which it is consistent with the data, which is called as the goodness of fit. If the goodness of fit is adequate, it supports the plausibility of the relations among variables (Teo *et al.*, 2013). Various model fit indices for the measurement model obtained in this study are noticed in accordance with the fit indices specified in Table VI.

Model modification

Adjustments are made on only some error variances pointed out by AMOS under modification indices tab for connecting them to reduce discrepancy and improved fit of the model (Schreiber *et al.*, 2006) by keeping hypotheses undisturbed. Residual variables for which modification indices are of value 30 and above (Ho, 2014) are connected to produce the final measurement model with improved model fit indices as shown in Figure 2.

Data interpretation and hypothesis testing

Among the nine relationships developed by the SEM model pertaining to traditional SMM (input) and new emerged SMM (output) in terms of performance, pleasure and pointing-out, six latent variables are found statistically significant ($CR > 1.96$ at $p < 0.05$) with four being positively related and two have negative influence (refer Table VII).

The SEM measurement model has demonstrated that the operationalization of the concept appears to be stable and the relationships hypothesized appeared to be measuring

Table VI.
Fitness of structural
model based on model
fit indices

Fit indices	Measurement model under study	Recommendable guidelines for model	Literature support	Model fit
χ^2	3416.9014 with df = 1278 is significant for $N = 642$	Insignificant for small sample ($N < 250$)	Anderson and Gerbing (1988)	Acceptable for large samples ($N > 250$)
χ^2/df ratio	2.67363	< 3	Hoofs <i>et al.</i> (2018) Teo <i>et al.</i> (2013) Iacobucci (2010)	Good fit Good fit Good fit
Hoelter's critical N	$N = 642$	$N = 256, p < 0.05,$ $N = 263, p < 0.01$	Hoelter (1983)	Good fit
GFI	0.8254	< 0.95	Lomax and Schumacker (2004)	Good fit
AGFI	0.8045	< 0.95	Lomax and Schumacker (2004)	Good fit
RMSEA	0.0511	< 0.05 good fit < 0.08 reasonable fit < 0.06 good fit	Hu and Bentler (1998), Hu and Bentler (1999) Singh (2009), Browne and Cudeck (1993)	Close to good fit Good fit
CFI	0.9417	> 0.95 > 0.90 Close to 0.95	Lomax and Schumacker (2004) McDonald and Ho (2002) Hu and Bentler (1999)	Close to good fit Good fit Close to good fit
TLI	0.9371	> 0.95 > 0.90	Lomax and Schumacker (2004) McDonald and Ho (2002)	Close to good fit Good fit

Table VII.
Integrated SMM and
hypothesis testing

Null hypothesis	SMM (input vs output)	SRW	RW	CR	Sig.	Hypothesis support
H_{01}	Performance←Physical Evidence + Processes	0.5388	0.5137	11.03	$p < 0.001$	H_1
	Performance←Promotion + Place	0.0644	0.0588	1.59	$p > 0.05$	H_{01}
	Performance←People	0.0858	0.1072	-2.25	$p < 0.05$	H_1
	Performance←Program + Price + Prominence	0.3768	0.4245	6.43	$p < 0.001$	H_1
H_{02}	Pleasure + Pointing-out←Performance	0.0197	0.0094	0.21	$p > 0.05$	H_{02}
H_{03}	Pleasure + Pointing-out←Physical Evidence+ Processes	0.3187	0.1452	3.26	$p < 0.01$	H_3
	Pleasure + Pointing-out←Promotion + Place	0.2336	0.1019	3.03	$p < 0.01$	H_3
	Pleasure + Pointing-out←People	0.0350	0.0209	0.48	$p > 0.05$	H_{03}
	Pleasure + Pointing-out←Program + Price + Prominence	0.2290	0.1233	-2.01	$p < 0.05$	H_3

Notes: SRW, standardized regression weights; RW, regression weights; CR, Critical Ratio

what this study and hypothesized model has set out to measure. The results also demonstrated a strong predicted ability of latent construct “Performance” (output) with square multiple correlations (R^2) value of 0.7514. This means that the predictors of “Performance” explain 75.14 percent of its variance. However, second service mix output, “Pleasure+Pointing-out,” is designated only 14 percent of its variance. As mentioned by Hair *et al.* (2011), R^2 values of 0.75, 0.50 or 0.25 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively. Here we can conclude that latent variable, “Performance,” has a substantial predicted ability encompassed by “Program+Price+Program” (0.3768) and “Physical Evidence+Processes”

(0.5388), whereas, latent variable, “Pleasure+Pointing–out,” has a low predicted ability constructed by “Program+Price+Prominence” (0.2290), “Promotion+Place” (0.2336) and “Physical Evidence+Processes” (0.3187). Based on the students’ perceived experience on the SMM strategy adopted by TEIs situated in the Khandesh region of India, the hypothetical model is tested and hypotheses validation is described below.

Hypothesis (H_{01})

- Students’ perceived experience on “Physical Evidence+Process” offered by their TEIs in which they are enrolled is significant with their “Performance” in regard with their skill and knowledge enhanced (CR 11.03 at $p < 0.001$), which concludes that H_{01} is rejected and alternative H_1 is accepted for this case. This leads to a rise of 0.5388 units in their “Performance” if “Physical Evidence+ Processes” are raised by 1 unit.

Physical facilities, processes, exerted a positive impact in enhancing students’ skill and knowledge. Kuh (2009) reported various educational service activities triggering students’ engagement are vital for their performance in regard to skills and competencies. These discoveries replicate other findings of the study conducted by Mahajan and Golahit (2017b) showing significance of physical infrastructural facilities, academic and non-academic services on employability skills in context to TE in India. It also supports the study of Jamjoom (2012) where employability skills were found to be distinct with academic-related facilities and extracurricular activities:

- Students’ perceived experience on “Promotion+Place” associated with their TEIs is not significant with their “Performance.” As students’ skill and knowledge enhancement do not have any relationships with “Promotion+Place,” H_{01} is supported and retained. Promotion and Place that are provided by TEIs are not well organized to augment the performance of students.
- “People” influence experienced by the students is significant with their “Performance” (CR -2.25 , $p < 0.05$), however, negatively associated which determines the rejection of H_{01} and acceptance of H_1 . This further tells that when the “People” influence increases by one unit, their “Performance” will be down by 0.0858 unit.

People influence is though significant but not up to the expectations resulting low impact on improving the performance of students. These findings are different to the statement made by Yelkur (2000), who is of opinion that people encourage students to achieve better employability skills. Under pressure situation, arising due to meeting expectation of people could be the worrying factor that results in the low performance of students:

- The perceived experience on a group of “Program+Price+Prominence” of TEIs is significant and shows a positive relationship with the “Performance” of the students (CR 6.43, at $p < 0.001$). This fixes the rejection of H_{01} and confirms alternative H_1 for this case. Further, it confirms that SMM, “Program+ Price+Prominence” when goes up by 1, students’ “Performance” will go up by 0.3768. This supports beliefs of Jagadeesh (2000) who is of the opinion that that program attributes enhance capabilities and employability skills.

Hypothesis (H_{02})

- Students’ perceived experience on “Performance” in terms of their skill and knowledge development are not significant with their “Pleasure+Pointing–out.” H_{02} is retained here. To be meaningful, students belonging to this region experienced less satisfaction than expected due to their performance, consequentially no act of referral is perceived. In this case, skill and knowledge enhancement is not a significant indicator of satisfaction and referral act.

In context to Australian higher education, Mahsood Shah and Widin (2010) stated generic skill as an important factor for indigenous students; however, the universities are not attentive towards it that is causing dissatisfaction among them. Shah *et al.* (2010) reported satisfaction because of the development of generic skill in case of offshore students. Results of this study are contradictory to Harvey (2000) and Dacre Pool and Sewell (2007) who believed employability skills are significant performer indicator of satisfaction.

Hypothesis (H₀₃)

- Students' perceived experience on "Physical Evidence+Processes" provided by their TEIs wherein they are enrolled are significant with their perceived experience of "Pleasure+Pointing-out" (CR 3.26 at $P < 0.01$). Thus, when "Physical Evidence +Processes" goes up by 1 unit, "Pleasure+Pointing-out" will go up by 0.3187 unit. This concludes that H_{03} is rejected and alternative H3 is accepted.

Students' feelings of satisfaction is greatly determined by physical facilities and processes offered by their TEIs, thereby promoting referral act for their institution. These outcomes are supportive to the findings of Sakthivel *et al.* (2005), Neelaveni and Manimaran (2015), Mahajan and Golahit (2017a) and Carter (2009) that revealed the impact of students satisfaction on account of campus facilities. It also supports the findings in terms of the positive relationship of service facilities with students' satisfaction and behavioral act of recommending services as discovered by Casidy (2014), Athiyaman (1997), Subrahmanyam (2017), Annamdevula and Bellamkonda (2016a, b) and de Castro and de Guzman, (2014):

- Students' perceived experience on "Promotion+Place" are significantly associated with their perceived experience on their "Pleasure+Pointing-out" (CR 3.03, at $p < 0.01$). The effect is positive, which ensures that when "Promotion+Place" increases by 1 unit, "Pleasure+Pointing-out" will increase by 0.2336 unit. Here, H_{03} is rejected and alternative H3 is accepted.

Marketing communication sources and location of TEIs as per the perceived experience of students are significant constructs to their satisfaction and act of referral. It followed findings of Casidy (2014) who revealed marketing communications to be a significant predictor of satisfaction and action of recommending:

- Students' perceived experience on the surrounding influences, "People" is not significant with their "Pleasure+Pointing-out". H_{03} is retained in this case.

This states that the surrounding people who are the supporting pillars for the students' TE career do not have any impact on their satisfaction and their referral act perceived. These results are opposite to the views of Sahney *et al.* (2004), who stated human influence affects students' satisfaction:

- Students' perceived experience on "Program+Price+Prominence" are significant with their perception of "Pleasure+Pointing-out"; however, the negative value indicates that the impact is below the expectation level (CR -2.01, at $p < 0.05$). This indicates that if "Program+ Price+Prominence" goes up by 1 unit, their perception of "Pleasure+Pointing-out" will go down by 0.2290 unit. H_{03} is rejected and alternative H3 is accepted.

The service mix group of price, program and prominence combined shows a significant impact on satisfaction and act of referring, however, with negative inclination. The positive relationship of price (cost of education) and prominence (age and reputation of institution) with satisfaction and referral act as noticed by regression analysis supports the earlier findings of Clemes *et al.* (2007) and Turkyilmaz *et al.* (2018). The positive relationship of prominence, institution reputation with students' satisfaction and adherence is in accordance with the earlier findings of Helgesen and

Nesset (2007) and Elsharnouby (2015). Price element favoring satisfaction and referral act confirms that various fee reimbursement schemes of the government have taken up most of the financial burden from students and their parents. In terms of program element, regression analysis showed that the quality of life and strengths and talent associated with program as benefits are negatively posed with satisfaction and referral act. This concludes that their self-efficacy referring to the program utilities and self-capabilities are not up to the expectation and are below the perceived value (Jones *et al.*, 2010; Matusovich *et al.*, 2010).

The findings of this study in a different cultural and socio-economic context have ecologically acknowledged earlier findings and nevertheless it has also provided new findings that are unique and exclusive in the HTE framework. H_{01} - H_{03} are tested and research objectives 1 and 2 are acknowledged here.

Visionary suggestions and practical implications

Based on the perceived experience of students studying in TEIs situated in the Khandesh region of India, overall, physical evidence and process are noticed to be prime significant indicators (input) for performance, satisfaction and referral act of students. However, people element, which is not significant in this case on the satisfaction and referral act of students and is also negatively positioned with the performance of the students. Therefore, “people” element should be reviewed by TEIs of this region for reframing the policies on human relationships that promote motivation, training, interactions and participations. Parents and institution’s staff meetings are necessary for informing families about their children’s academic performance and achievements periodically. Institutional staff as a students’ guardian (mentor) for taking care of students will be encouraged to feel them protected and affiliated. Students and staff interface should be regularly held with industry, and alumni on campus or at industry places or through video conferencing will be effective for undergoing professional learning experience for students. It will help to enhance their performance, quality of the institution (Abdul Rahman and Unnikrishnan, 2015) and word-of-mouth for their institution (Svoboda and Harantova, 2015). Involvement of all human influencers through direct or indirect interaction will keep students’ moral and interest high. Students influencers are powerful in contributing overall satisfaction (Oldfield and Baron, 2000); therefore, people’s involvement and interaction is must in delivering and performing service. For these reasons, TEIs of this region should focus on relationship marketing (Gronroos, 1994; Maringe and Gibbs, 2008) that comprehend students, faculty, school-teachers, alumni and industry people as “partners” of the co-creating system, in which long-lasting relationships can be developed. With this approach students will be co-producers of the TE system by accepting their responsibility for participating and performing at their own with the support from the TEIs and other stakeholders of the system (Elsharnouby, 2015). TEIs of this region should develop their social networking sites like Facebook, LinkedIn, Twitter and WhatsApp groups that are advantageous in making interaction and building strong bonding among all stakeholders that automatically facilitate the co-creating system not only in the TE system but also in the society as a whole. Such a system is helpful in transforming students’ willingness into acceptance, their engagement into participation, their skills into values, institutional identity into a brand and their professionalism into socialism.

Another SMM element, program attributes that revealed to have a negative command on satisfaction and referral act, is ought to be reframed for enhancing students’ satisfaction and referral act. Program attributes as perceived by the students in terms of job prospectus and entrepreneurship should be imparted as expected by them. Separate placement cell and entrepreneurial cell are vital to fulfill students’ expectations regarding program benefits. Students should be offered course enrichment by providing add-on or certification courses

such as Massive Open Online Courses. Besides program curriculum, TEIs should provide mandatory soft as well as technical skill training to their students as required by industry to enrich their language proficiency, knowledge and skills and to make them employable and competitive in job market. This kind of certification courses and training accomplished during the program curriculum will add value to their curriculum vitae and will raise their market standing. Start-up and project laboratories, research centers, industry and alumni interface and project-based learning that are associated with idea generations are effective in developing entrepreneurship skills and establishments of small starts-up. This will create a development of small-scale enterprises and the opportunity of employment in the region that will assist in raising the quality of life of individuals and socio-economic status of the region. Service delivery related to program enrichment contributes to upsurge students' self-efficacy and motives that create a good campus life experience for them. Most importantly, this makes the program's value more justifiable for what students have accepted it and once the expectations are met, satisfaction will be naturally established.

SMM elements such as promotion and place provided by the TEIs are not significant on students' performance and must be examined again to get the expected performance of their students. This suggests that activities and achievements of students in terms of skill and knowledge enhancement should be promoted through TEIs marketing communication sources. Promoting and publicizing students' performance-based achievements on social media and newspapers are effective promotional tools in appreciating their efforts and achievements and in boosting their morale. Performance-based achievements should be rewarded at the institutional level in terms of cash benefits or compensations that will also create motivation for others. Second, as place element is associated with location and locality of physical facilities and amenities, equipment, playground, laboratories, library sources, hostels, safety and security services, and health and recreational services should be more accessible and convenient so that assist to develop the performance of students. Even digital locations, such as social networking sites, as discussed earlier should be easily accessible for the students for their interactions with other stakeholders that may aggrandize their performance.

Tijiang *et al.* (2017) revealed that students expect continuous improvement in SMM provided by the institutions and it is not significant on students' satisfaction due to non-progressive development over the service period. Therefore TEIs of these regions are suggested to evaluate SMM periodically and reframe their policies to achieve a desired performance, satisfaction, recommendations and anticipated results. Objective 3 related to proposing visionary suggestions to implement the measurement model in terms of integrating SMM as input and output of the TE system is achieved here.

Students' perceived experience on SMM elements performed through the SEM technique has pulled out the best possible relationship between the service inputs and output. It also has brought out notable emerging marketing Ps, Prominence, Performance, Pleasure and Pointing-out. Incorporating 11 Ps in TE settings ensures value-based outcome; "performance" being valuable to students in terms of employability skill development, "satisfaction" being advantageous to institutional brand development by spreading word-of-mouth, and "referral act" being effective for collective growth in terms of captivating future enrollments. In context to TE setting, these outcomes and its measurement are productive in making TE not only to "grow" quantitatively but also to "develop" it quantitatively. By adopting methodology and empathizing the outcomes mentioned herein, the TEIs of this region can stay ahead in the realm of growing competition along with being an attraction for future students and being a holistic service provider for existing students. Integration of SMM as inputs and output of the TE system pragmatically are valuable in making awareness, attracting, engaging, retaining and making students' employable and, thus, signals strong estimates for growth and development in TE setting. This can be used as a self-assessment and diagnostic tool to measure students' performance, to identify satisfaction level and to predict the act of referring

(future enrollments) in relation to institutional service offerings. Students market in the Khandesh region is huge and can be seen as an emerging market and a great opportunity to develop the quality of life of the region. If TE is a treasure house for socio-economic development of rural population, integration of SMM elements is the vital key for it. Besides strengthening the growth and development of TE, this measurement model is expected to contribute to the socio-economic development of the country by appealing future technocrats and creating capable and satisfied technocrats with sets of required skills that compete to face the emerging global challenges.

Discussions and conclusion

Almost all previous studies have considered SMM as an input to the service system; however, they failed to link them as an output of the service system. SMM as a strategic marketing tool has advanced from the theoretical to practical prospective (Kotler, 1976; Kotler and McDougall, 1984); however it has been more intended toward service providers than their customers (Kotler, 2003). No doubt, the traditional marketing mix has proved its usefulness in promoting marketing concept by providing a practical framework to the marketing decision making pertaining to the education field for many years (Bennett, 1995). Contradictory, several academicians had objections to the values and future of SMM in terms of its inadequacy and consistency to address specific situations in the marketing of services with technology and time changes (Constantinides, 2006). Gronroos (1989) mentioned that the number of elements representing SMM is too limited for achieving mega marketing, and accessing new market conditions and situations. Grove *et al.* (2000) recognized the importance of the performance of service from customers' point of view and strongly recommended its addition to SMM list. Graduate employability (students' performance in terms of skill and knowledge enhancement) is agreed to be the key influencer of economic growth in the global knowledge economy (Bridgstock, 2009), which strongly suggests the addition of "performance" in SMM list.

In regard to the marketing of services, Beckwith (2001) was of the opinion that in a changing world, service delivery should be focused on customer satisfaction. For marketing to be a significant contributor to value-adding and continuous movement (Porter, 1985), SMM elements must be assessed through both traditional and emerging marketing domains (Constantinides, 2006). Marketing efforts in today's complex marketplace will succeed only if they are monitored to evaluate the performance of service and satisfaction of customers, and if it brings future business opportunities. As the students' investment in terms of cost, efforts and time is substantial in availing their TE study, their satisfaction resulting from self-development and performance during their academic is important; moreover, such a behavioral measurement (Sander *et al.*, 2014) is most vital in the repositioning of SMM elements. Kotler *et al.* (2016) pointed out teaching services being intangible among all service industries and SMM elements pertaining to it should be attentive to its depth of intangibility. As SMM conjointly effects on customers engagement, satisfaction and relationships, it should not be limited to the numbers (Kotler and Armstrong, 2017). In TE scenario, most of the future enrollment spring up due to existing or experienced students or their influencers, "Pointing-out," i.e. recommending services to others has a dominant role in attracting future enrollments. Rafiq and Ahmed (1995) are of the opinion that extended marketing mix has been successfully accepted due to its ability of detailing, broadness, integration and comprehensiveness of marketing concepts. As extended SMM exhibited in this study carries that sense and nature approaching customer orientation, it deserves a great scope for future of the TE system in terms of the growth and development of existing TEIs as well as newly established institutions.

This study has evidenced a desperate need of extending SMM and integrating them as input and output of the TE system. Subsequently, the findings have successfully traced their relationships based on the hypothetical model. In addition to traditional SMM, it has

discovered new emerged in terms of “Prominence” as another service input, and “Performance,” “Pleasure” and “Pointing-out” as service output. All three SMM elements appertain to service output are also vital as a measurement model for service delivery. It can be concluded that, overall, 11 SMM are examined for their relationships and their correlation in terms of input and output to the TE system showing strong reflections. Such integration of SMM is perhaps the best possible approach that ensures the growth and development of TE that offers strong add-ons to the special characteristics of a dynamic TE environment. The study has provided some and emerging new insights for service providers (TEIs) who intend to improve students as well as institutional performance and for researchers in designing new studies.

Limitations and future research directions

The investigation of this study is dependent on students’ perceptions (primary customers). Future research may be worthwhile to develop measuring instruments from the point of other stakeholders of the HTE system. Almost all earlier studies on SMM are oriented to the initial phase, i.e., service selection phase of future students for their inclusivity into the TE environment. Though this study has focused general look on SMM elements, future research involving more investigation on the constructs and scales of SMM that focuses and covers all three students’ life cycle, i.e., future-students, current-students and alumni is anticipated. Similarly, this study is linked with TE programs of higher education. Future studies on non-technical programs of higher education like medical and law are appreciated. Finally, the sampling frame involved in this study is confined to the Khandesh region of India, a rural and tribal part of India. Although the findings cannot be generalized, the measurement model exhibited in this study in terms of integrating SMM elements as service input and service output of the TE system can be applied to the other regions of India or even taking it for global consideration. Such a study would facilitate to examine the performance of SMM elements as input and output to the education system in different regions and countries.

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Further reading

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Appendix

Note:

1) Tick ✓ in front of appropriate option

2) 5 is most important and 1 is least important

		1	2	3	4	5
1	<i>Rate your self-motives in availing technical education</i>					
	Quality of life					
	Job prospectus					
	Talent and strength					
	Entrepreneurship					
2	<i>Rate the influence of following people in availing your TE career</i>					
	Parents					
	Siblings					
	Relatives					
	Friends					
	Current-Students					
	Alumni					
	Schoolteachers					
	Institute Staff					
	Yourself					
3	<i>Rate your institutional characteristics</i>					
	Cost of education					
	Location, distance and locality					
	Institutional image and reputation					
	Age of institution (experience)					
4	<i>Rate your institutional marketing communication sources</i>					
	Media advertisement					
	Banners and hoardings					
	Website					
	Social media					
	Counselling visits					
	Educational fairs					
	Leaflet and brochure					
	Sponsorships					
	Publication/Publicity					
5	<i>Rate your institutional physical facilities</i>					
	Infrastructure and technology					
	Amenities and recreational					
	Library and computational					
	Recognition and gradation					
	Sports and cultural					
	Campus life					
6	<i>Rate your institutional educational activities</i>					
	Faculty and teaching-learning					
	Campus placements					
	Industry interactions					
	Co-and extra-curricular activities					
	Safety and security services					
	Alumni interaction					

	Skills development programs					
	Research activities					
	Finance and scholarship					
7	<i>Rate your knowledge and skills enhanced availing your TE career</i>					
	General Knowledge					
	Intelligence Quotient					
	Technical Skills					
	Soft Skills					
	Team Development					
	Leadership					
	Confidence Level					
	Stress Handling					
	Creativity					
	Hardworking Ability					
8	<i>Rate your satisfaction while availing your TE career</i>					
9	<i>Will you refer your institution to others for availing technical education here?</i>					

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Making the student voice count: using qualitative student feedback to enhance the student experience

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Abstract

Purpose – The purpose of this paper is to outline how qualitative data can be used to gain insights into the experience of different cohorts of students including online and on-campus students.

Design/methodology/approach – Qualitative data from student surveys are used to analyse three years of data. The text analytics software Leximancer was used to analyse the qualitative student comments.

Findings – Comparing comments of on-campus and online students, the findings indicate that the students had different perceptions in regards to what they rated as best aspects of their course and what needed improvement.

Originality/value – The study is based on three years of qualitative comments collected in student surveys. The study is unique, given that previous studies have looked at qualitative comments in general rather than comparing the experience of online and on-campus students.

Keywords Student experience, Student voice, Qualitative feedback, Student feedback

Paper type Research paper

Introduction

Universities have a long history of collecting feedback from students, and this is now part of national and institutional quality assurance frameworks. Institutions are actively assessing the feedback from students to measure their experiences on aspects such as teaching quality, course content, assessments, support services and campus facilities. In the last decade, quantitative feedback collected from national surveys has been reported publicly on websites such as qilt.edu.au (in Australia) and unistats.ac.uk (in the UK). Several institutions have developed the capacity to analyse and report quantitative data using business intelligence tools. Data are reported at an institutional, school, campus, course, subject and teacher level. While universities have successfully used quantitative data to assess the student experience, limited progress has been made to systematically analyse and report on qualitative feedback (Brockx *et al.*, 2012; Wongsurawat, 2011). It is estimated that approximately 300,000 qualitative comments are collected annually from students in an average university of more than 20,000 students. The data are mainly collected using end-of-term subject and teacher evaluation surveys.

Feedback from students in national surveys is used by university management to benchmark with other comparable institutions (Buckley, 2012). The data from quantitative feedback are also used in the ranking of universities (Canning, 2015; Turner, 2005). Academic leaders use student feedback data to identify areas that are performing well and could be commended (Hoon *et al.*, 2015). Areas needing improvement form part of future priorities, such as course reviews, staff professional development, assessment re-design and effective use of technology in teaching (Blair and Valdez Noel, 2014). In some institutions, academic leaders at faculty level triangulate various data sources such as student feedback, academic outcomes, and student complaints to identify issues that require further investigation. Faculties also use student feedback data in annual performance reviews of



academic staff, and potential promotions (Hoon *et al.*, 2015; Kember *et al.*, 2002; Shah and Nair, 2012). In some institutions, academic staff utilise qualitative data to gain insights on student experience and implement changes to curriculum content, assessment, teaching and other areas (Lewis, 2001; Moore and Kuol, 2005; Shah, 2013). Feedback from students is also used by faculty leaders to assess the quality of teaching by sessional or casual staff to determine their future employment.

There is the general view that student feedback is a valid measure of instructional effectiveness (Greenwald, 2002; Spooren *et al.*, 2013) and it provides valuable insights related to learning and teaching practices (Alderman *et al.*, 2012; Kinash *et al.*, 2015; Palmer, 2012). Quantitative feedback enables academics and other leaders to identify areas of good practices and areas needing improvement. Where quantitative scores or ratings are low in certain areas (e.g. feedback on assessment), the systematic analysis and reporting of qualitative data is critical in understanding the possible causes of the low ratings. In most cases, students provide qualitative comments to justify their ratings. A ten-year study on student experience by Grebennikov and Shah (2017) found that the qualitative findings align with quantitative results. A consistent trend of low ratings in certain areas warrants further attention, which should be prioritised. Their findings suggest that the volume of qualitative comments in subjects is higher where quantitative ratings are low. Qualitative data can therefore provide helpful explanations of quantitative ratings.

The richness of qualitative data provides an enhanced understanding and insights about student experience (Gonyea and Gangi, 2012; Halloran *et al.*, 2014; Hendry *et al.*, 2007; Jackson and Trochim, 2002). Qualitative comments are an essential way of making the students' voice count. For example, Appleton's (2018) study on library services concluded that qualitative feedback from students truly captures their voice by focussing on what is important to them. Students clearly wish to make their voices heard, which is evident in the volume of qualitative student comments collected through various student surveys. The student voice in the context of this study focusses on listening to the reflections, experiences and aspirations of students about a whole range of matters important to them (cf. Fielding, 2004).

According to Oliver and Pegden (2009), qualitative data from student feedback determine the level of positivity and negativity in student comments and allow academics to explore differences with quantitative results. Symons (2006) argues that qualitative feedback adds context to issues which arise from the quantitative data. It should also be noted that students value providing open-ended comments in their feedback (Davison and Price, 2009). Erickson and Kaplan (2000) found that open-ended comments often elicit more honest responses. Most students attempt to explain their quantitative ratings by providing open-ended comments (Brockx *et al.*, 2012).

A study by Steyn *et al.* (2018) found qualitative approaches provide a deeper, and more context-specific perspective on the student experience. They found qualitative feedback provides insights that are generally regarded as more relevant to the improvement of teaching and learning outcomes. In this regard, Scott (2005) recommended the use of "best aspect" vs "needs improvement" categories of open-ended comments in student survey questionnaires. Grebennikov and Shah (2013) concluded that the triangulation of various sources of qualitative data is important in comprehensively understanding and improving the student experience beyond the classroom.

While previous studies have emphasised the value of qualitative data, several scholars have outlined the logistical limitations related to analysing and reporting this type of data. The limitations mainly include access to the resources required to conduct meaningful analysis of qualitative data (Richardson, 2005; Santhanam *et al.*, 2018), and issues associated with manual coding of qualitative data (Smith and Humphreys, 2006). Another phenomenon emerging is the increased volume of qualitative comments, both positive and negative,

written by students on social networking sites, which is beyond the control of academics and universities.

The use of computerised approaches to analyse qualitative feedback can provide additional information to drive changes at the class, subject, course or institutional level (Abd-Elrahman *et al.*, 2010). There are several software tools available to analyse qualitative student feedback. The CEQuery tool, developed in 2004, is used in some Australian universities (Scott, 2005). IBM's SPSS Text Analytics is also used in some institutions (Tucker *et al.*, 2012). Other tools that can be useful include NVivo, Atlas.ti, Leximancer and MAXQDA, which are helpful in solidifying textual data and outline common themes (Thomas, 2014). According to Stupans *et al.* (2016), the Leximancer tool provides an opportunity to undertake deeper analysis of student perceptions, potentially making it an invaluable tool for both internal and external benchmarking activities. Leximancer is the software chosen to analyse the qualitative student comments collected for this study.

Methods

To gain better insights into the experiences of online and on-campus students, this exploratory study uses data collected at one Australian University over a three-year period with particular focus on the meaning ascribed by the students' voice. The qualitative data are based on the end-of-term student evaluations, which are undertaken with all students in the final three weeks of the term. The completion of these surveys is voluntary, and their response rate is usually between 40 and 65 per cent. The students' comments were analysed using the text analytics software Leximancer to explore the major themes of the qualitative student comments and their data distribution patterns.

Automated content analysis software (ACAS) is becoming increasingly popular with the research community. Leximancer, as an ACAS tool is becoming the research community's first choice when analysing "big data". Researchers use Leximancer either as an alternative to manual coding or to support their manual coding. Recent applications of Leximancer in the social sciences include analysing news media discourse (MacKinnon, 2015), addressing big literature challenges (Nunez-Mir *et al.*, 2016), analysing social media data (Tseng *et al.*, 2015) and mapping of academic research articles (Cretchley *et al.*, 2010; Jin and Wang, 2016).

Leximancer conducts conceptual (thematic) and relational (semantic) analysis of textual data (Campbell *et al.*, 2011). The program examines textual material for the frequency and co-occurrence of concepts that cluster together in textual data and then generates visual concept maps to present how concepts relate to one another. Concepts are presented as grey dots. Groups of semantically-related concepts are indicated as themes which are shown by circles (Cretchley *et al.*, 2010). Concepts gather in the maps according to their semantic relationship to other concepts, indicating that adjacent concepts are related. For example, when concepts are clustered close together or theme circles overlap in the maps, it means that these concepts were used together in the student comments (cf. Campbell *et al.*, 2011). The concept maps are "heat-mapped" where warm colours (red, orange) indicate the most important themes, while cool colours (blue, green) denote less important ones (Leximancer, 2018). For a more detailed description of the algorithm underlying Leximancer, interested readers can refer to Campbell *et al.* (2011) and Wilden *et al.* (2017).

The data were prepared for the Leximancer analysis using the following steps. The qualitative data were divided into two groups to allow comparisons between on-campus and online students. Qualitative comments were then subdivided according to the nature of the open-ended comments which included "best aspects" and "aspects that needed improvement" (cf. Stupans *et al.*, 2016). By subdividing the qualitative data in this way, it is possible to compare the perspectives of both on-campus and online students and to establish distinctive themes emerging from the two different student groups. The findings are of particular interest given that previous studies have only reported on qualitative data at an aggregate level rather

than comparing on-campus and the growing cohort of online students. A total of 16,582 student comments were subjected to analysis using the Leximancer software. Table I provides an indication of the volume of qualitative data collected in number of words.

To ensure anonymity, the process of analysis involved removing any affiliations from the data. Hence any reference to specific disciplines or campuses were removed from the generated concepts in Leximancer. Additionally, several singular and plural words were merged, i.e. lecture and lectures, or class and classes. The Leximancer software assisted this study by adding objectivity to the findings and increasing the reliability of the findings. Coder reliability can be an issue during manual coding processes and lead to human interpretation biases or inconsistencies due to preconceived ideas by human coders (Smith and Humphreys, 2006). While the Leximancer software is helpful in presenting qualitative data in visual form, the accuracy and description of the visual maps are determined by the researchers. In the case of this study, both researchers were involved in critically interpreting the visual concept maps and assigning meaning to the connections outlined within the maps.

Any concepts and themes identified within the qualitative student comments are presented in two ways: a visual concept map outlining the relationships of the concepts, and a thematic summary in table format outlining the concepts according to the thematic importance and connectivity score. The theme connectivity score is the sum of all the text co-occurrence counts of a concept with every other concept on the map (Leximancer, 2018). The score provides an estimate of the coverage of a theme across the data and is therefore an indicator for the relative importance of a theme within the textual dataset.

Findings

The following discussion is divided into four sections and highlights the main themes that emerged from the student evaluation comments.

Best aspects as rated by on-campus students

The Leximancer thematic summary for best aspects as rated by on-campus students is shown in Table II. The most important theme that emerged during analysis is “course” with a theme connectivity score of 100 per cent. The theme of “course” incorporates concepts such as information, unit and understanding. These concepts indicate that students were

	On-campus students	Online students
Best aspects	174,986 words	168,484 words
Aspects needing improvement	166,106 words	271,598 words

Table I.
Volume of qualitative student comments in number of words

Theme	Connectivity (%)	Concepts mentioned within the themes
Course	100	Course, best, unit, helped, learn, understanding, information, better, different, feel
Students	69	Students, understand, helpful, coordinator, provided, time, study, tutor, questions, concepts, clear, enjoyed
Real life	62	Real, life, knowledge, unit, interesting, examples, practical, useful, content, experience
Lecturer	58	Lecturer, class, teaching, easy, lecture, topic, explain
Assessment	32	Assessment, learning, work, week, presentation, feedback
Business	10	Business, future, skills, people

Table II.
Thematic summary for best aspects rated by on-campus students

engagement in learning. The following quotes exemplify the student voice: “the lecturer’s teaching is very good, she knew just how to motivate the class” and “the lecturer focussed more on the basics and explained important theories, so it was easy to follow the lectures”.

The theme of “assessment”, which has overlaps with the theme of “course”, emerged as the fifth most reported theme. The theme of assessment was closely related to concepts such as feedback, learning and presentation. The on-campus students’ evaluation indicate they preferred some assessment types over others: “the presentations are very helpful for students’ self-confidence”. Students also rated highly that “the assignment work was marked quickly, given how excessively wordy the assignments were” and that the feedback “was great for learning”. The final theme of “business” includes the concepts of skills, future and people. These concepts indicate that students felt “positive to enter the business world down the track”. Students also commented that they “improved their communication skills”, which might “help them in the future when looking for a job”.

Best aspects as rated by online students

The top theme for the qualitative comments by online students which emerged through the Leximancer analysis was “course”. The theme includes concepts such as learning, enjoyed, interesting, content, and topics. These concepts show that online students enjoyed their learning experience in their courses. Online students commented on the “really interesting theories in the course” in conjunction with “learning whilst investigating real companies”. Online students perceived “the contact with other online students as a good aspect because of the good tips and feedback” (Table III).

The theme of “easy” was the second most reported theme with a connectivity score of 59 per cent. Concepts within this theme were principally related to the content and delivery of the learning materials such as lecture recordings, resources, notes and text. Online students spend much of their time assimilating the learning materials by themselves without any formal class times. Therefore, it is in their interest that learning materials presented to them are clear, stimulating and easy to follow. The following quotes illustrate some of the students’ comments: “Well explained lectures, delivered in an easy to follow structure”, “the site (learning management system) was easy to navigate and the information was clearly stated” and “the reading material provided was very good and easy to understand”.

“Assessment” was the third most rated theme by online students with a connectivity score of 52 per cent. The theme circle of “assessment” overlaps with the theme circle of “course”, indicating that the students’ achievement of learning is progressive through assessments (see Figure 2). Concepts within the assessment theme include feedback, practical, group and exam. The online students appreciated “the fast turnaround of assignment results”. Furthermore, constructive feedback was highly valued: “The comments provided on the assessments were comprehensive and as such extremely beneficial to improve my knowledge and skill”. Students showed a preference for assignments of a more practical nature as the following quote illustrates: “I loved the

Theme	Connectivity (%)	Concepts mentioned within the themes
Course	100	Course, learning, best, enjoyed, unit, interesting, content, helped, real, teaching, topics
Easy	59	Easy, understand, lectures, material, information, excellent, tutorials, clear, resources, notes, text
Assessment	52	Assessment, feedback, work, feel, practical, knowledge, given, exam, group
Students	42	Students, weekly, time, study, coordinator, distance, term
Lecturer	31	Lecturer, helpful, questions, sessions, available

Table III.
Thematic summary for best aspects rated by online students

peers in the qualitative comments when they suggested any aspects that needed improvement. Student comments focussed on concepts such as class, questions, tutorial and book. One aspect was that students would like to feel more supported when asking questions: “Unfortunately our lecturer does not take it seriously enough when students ask for help”. Another aspect included inconvenient class scheduling: “The only issue that I had was the class timings, 6pm-8pm is very late in the evening and it’s very inconvenient for some students”. Another concern was “textbooks that need to be more concise and less confusing”. Students also mentioned several topics they found difficult to grasp and they would have liked to receive further explanations to improve their learning. Low class attendance rates were also mentioned by on-campus students as something that needed improvement. To combat low attendance rates, some students proposed solutions: “If the course had in-class assessment, students would be more encouraged to come to class” (Table IV).

“Course” was rated as the second most reported theme in the Leximancer analysis with a connectivity score of 76 per cent. The concepts mentioned within this theme include lecturer, content and information. The evaluations by on-campus students indicated that there were several aspects that needed improvement for better student learning outcomes. One student comment mentioned that their “course covered too much information for one term making it hard to keep up with all the new information”. Another aspect was the need for “more solutions to be provided by the lecturer”. The teaching style of some lecturers also received attention: “The lecturers could improve the teaching methods to avoid going through the content too quickly and explain the theories and methods in more detail”.

The theme of “assignment” was the third most important aspect in need of improvement for on-campus students comprising concepts such as marks, feedback and group. The comments indicated that some students struggled with group-based assignments; however, given the opportunity to complete the assessment individually, they were still likely to be satisfied with their performance: “In the end I did really well in my assignment. I know it was a group assignment and I chose to do mine individually”. Some students voiced frustrations about how marks were allocated: “If the focus is on a specific task, then the marks should also be focussing on that task, not things such a layout of the word document”. Suggestions for improvement also focussed on how the learning management system was structured and how information about the assessments was presented. For example, one student voice criticized that “information about major assessment requirements could only be found at the bottom of the site which is confusing”.

The theme of “time” comprised concepts such as exam, week, study and term. Figure 3 shows that the theme of “time” overlaps with the themes of “students” and “assignment”, indicating that the scheduling of assignments across the term has implications for students in terms of time management. The due dates of several assessments can create challenges for students: “You should have seen my list of due dates that I had to adhere to that I created at the beginning of the semester, the assessment items were excessive, to say the least”. The time to complete certain assessment tasks in class was a further area of critique: “The presentations

Theme	Connectivity (%)	Concepts mentioned within the themes
Students	100	Students, class, lecture, questions, learning, understand, tutorial, topic, book
Course	76	Course, lecturer, coordinator, unit, needs, information, feel, helpful, teaching, content
Assignment	75	Assignment, marks, work, feedback, group, difficult, due, explained
Time	56	Time, better, exam, week, study, presentation, different, quiz, online, term
Practical	18	Practical, knowledge, slides, real, examples
Improvement	15	Improvement, unit

Table IV.
Thematic summary for aspects that need improvement as rated by on-campus students

about assessments, which prompted students to ask for “more clarity on assessment expectations” (Table V).

The second most rated theme of “course” included concepts such as learning, understand, and study, indicating that the qualitative comments in this theme were focussed on the learning journey of online students. Students called for better explanations of basic theories: “I think that this class should be less about feelings and experiences and more about actually learning the basic theories and concepts”. Content-wise, it appeared that some online students struggled with understanding certain information: “some parts of this course were hard to understand”.

The third most rated theme of “assessment” incorporated concepts such as marks, task and feedback. Online students indicated that assessment-related communication needs to be improved: “The assessment tasks were unclear and need more clarification. The results from the assessments were not real world and made me doubt my results”. The marking criteria for certain assessments were also criticized: “It was only when the marking sheet was shared later in the term that it was discovered there were additional requirements to the task”. Lastly, online students felt that more feedback should be provided: “I would have liked to see detailed comments on where I did well and where I need to improve”. Online students also stated that the exam preparation could be improved: “the exam advice was rather unclear, I did not know going into the exam whether the questions were going to be theory or practical based”.

The quality of “lectures” was another aspect in need of improvement. This theme also shows an overlap with the theme of “students” (Figure 4). Some of the comments indicated that the pre-recorded lectures made the online students feel less engaged with the material because “solutions were not always available for the exercises/problems set in the lectures”. As an improvement suggestion, online students recommended more student engagement via “forums and online discussions”. Some of the pre-recorded lectures for online students had “poor quality sound and in some you could not see the lecturer showing the workings for example problems”. The large file sizes of some pre-recorded lectures seem to cause technical issues for some online students: “when I watched the recorded sessions, the screen froze, and I could not see the presentation”.

The “textbook” theme included concepts such as notes, content and material, highlighting the importance of adequate learning materials for online students. The textbook and other study materials provided on the learning management system are the main method for online students to acquire knowledge. Therefore, they appreciate access to up-to-date learning materials: “the study materials could be updated” and “the textbook is somewhat lacking in a few areas and I had to refer to other texts to understand the theories”. Some students thought it would be better if textbooks had a focus on regional affairs, i.e. the Asia pacific region: “it was a UK-based book and all examples and case studies were based on UK trends/market events”. Online students also suggested improvements: “the course content should be simpler especially for those who do not have a prior knowledge background of the area”.

Theme	Connectivity (%)	Concepts mentioned within the themes
Students	100	Students, time, week, work, difficult, due, distance, unit, term
Course	90	Course, questions, learning, feel, understand, information, exam, study, unit, better
Assessment	64	Assessment, needs, feedback, required, marks, task
Lectures	39	Lectures, online, tutorials, lecturer, available, sessions, tutorial, video
Textbook	19	Textbook, content, material, notes, case
Group	11	Group, improvement, people, issue

Table V.
Thematic summary for aspects that need improvement as rated by online students

student satisfaction in previous studies (Gibson, 2010; Grebennikov and Shah, 2013; Ginns *et al.*, 2007).

The analysis of the qualitative data also highlights some characteristics intrinsic to online learning. Students studying online expect the availability of up-to-date learning resources. Our findings show that online students rated the ease of access to learning materials as the second most important theme (59 per cent). This is because online students spend much of their time assimilating learning materials on their own at a time most convenient to them; hence, they prefer learning materials that are easily accessible. This did not seem to be a major consideration for on-campus students, who usually have any of their queries answered during face-to-face lectures.

Online students also expect flexible assessment methods. The findings of this study show that it was mostly online students who are opposed to group assessments due to the logistics involved in forming well-functioning groups (Jaques and Salmon, 2007). Online students expect teaching staff to actively engage students in moderating discussions online (Yang *et al.*, 2010). They also appreciate avenues created by teaching staff to promote interaction between fellow students (Bourdeaux and Schoenack, 2016).

The associations formed between on-campus students and their lecturers during term are stronger than is the case with online students. Comparing Tables II and III indicates that “lecturer” emerged from the Leximancer analysis as the fourth most important theme (connectivity score of 58 per cent) for on-campus students, while it was the least important theme (connectivity score of 31 per cent) for online students. Nevertheless, the comments by online students showcase that they also appreciate a lecturer who made them feel supported by providing timely responses to their questions.

In comparing the aspects that needed improvement, the qualitative student comments showed strong similarities in the top three themes which emerged from the Leximancer analysis. Both student groups referred to course- and assessment-related matters as areas for improvements. Differences between the two student groups emerged in the lesser important themes. For example, on-campus students seemed to struggle with time management (connectivity score of 56 per cent), especially regarding attendance of on-campus classes and preparing for multiple assessment tasks. Interestingly, the time theme did not emerge for the online students, although it is known that this cohort of students also faces time related challenges from multiple commitments, i.e. work and family commitments, and university study requirements. For online students, aspects that needed improvement are related to more regular communication and better access to up-to-date learning materials. By comparing the “needs improvement” comments of online and on-campus students, the qualitative data helps academics and leaders to prioritise changes to learning strategies, i.e. improving the quality of teaching and assessment design.

From a quality assurance perspective, one of the key findings from this analysis is that qualitative comments are helpful in gaining a better understanding of online pedagogies.

Historically, the design of courses, teaching methods and strategies to engage students in learning is structured around face-to-face delivery. The emergence of online learning has resulted in institutions offering the same content that was originally designed for on-campus students to online students. However, these two student cohorts experience their learning journey differently based on their different expectations. The comments analysed in this study show where changes could be made for the benefits of students, in particular those studying online. For example, to address communications issues, lecturers could record weekly updates outlining assessment expectations or host weekly online tutorials for better student engagement. The findings also showed that online students expect more flexibility around assessment design with a preference for individual assessments rather than group work based assessments.

The study contributes to the current body of knowledge by looking beyond the ratings of quantitative items/questions that often do not provide the whole picture on areas of exemplary practice, which need to be rewarded or areas where improvements need to be made. The current study confirms the work undertaken by others in stressing that qualitative data are valuable because it provides richness, insights and enhanced understanding about the student experience (Gonyea and Gangi, 2012; Halloran *et al.*, 2014; Hendry *et al.*, 2007).

Furthermore, the current study extends previous studies by providing a rationale for the use of information technology in analysing qualitative datasets. A further implication of this study is based on ensuring the students' voice is heard by analysing their qualitative feedback. The authors argue that qualitative comments empower students to express their views on a wide range of topics, which may not be covered in quantitative data. It also enables the students to express their opinions in their own words about positive and negative experiences.

In terms of practical implications, this study shows that Leximancer is one useful way for universities and academics to make sense of large volumes of qualitative data and to gain better insights into the student experience. The open-ended and unstructured nature of qualitative student feedback, and their large volume, create challenges in the synthesis and understanding of the student voice. The more traditional or manual ways of content coding may be perceived as less productive in making sense of qualitative student comments. Leximancer was utilised for an automated approach to content analysis; this is yet to be widely adopted in synthesizing qualitative student comments. Future studies may organise the qualitative student comments according to different levels of detail, i.e. teaching pedagogy, international student perspectives, etc. Future research may also consider the challenges and opportunities faced by academic staff in teaching across on-campus and online student cohorts.

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Further reading

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Administrative empowerment among Kuwait University staff and its effect on their job satisfaction

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Abstract

Purpose – The purpose of this paper is to identify administrative empowerment and job satisfaction levels among Kuwait University staff. The study also aimed to reveal the relationship between administrative empowerment and job satisfaction. In addition, the study sought to identify any statistically significant differences in the study sample responses regarding employees' administrative empowerment and job satisfaction attributed to the study variables (gender and years of experience). Finally, the study sought to identify the possibility of predicting job satisfaction level among Kuwait University staff through administrative empowerment.

Design/methodology/approach – The study sample consisted of 115 administrators chosen from different faculties at Kuwait University. The study used a PLS-SEM via SMARTPLS version 3.2.8 depending on questionnaires as the study's tools.

Findings – The results revealed that Kuwait University staff enjoyed medium administrative empowerment levels. On the other hand, they had higher job satisfaction levels. It found a statistically positive correlation between job satisfaction and administrative empowerment. The study has found significant associations of administrative empowerment, participation in decision making, group work and self-motivation with job satisfaction.

Originality/value – The study recommends identifying regulatory obstacles that could prevent the dissemination and resolution of empowerment policy and culture.

Keywords Kuwait, Administrative empowerment, Job satisfaction, University staff

Paper type Research paper

Organizations are now operating in an era characterized by change, the dominance of technology, and search for innovation and creativity at all levels. These rapid changes cast their shadows over the managerial and administrative processes and impose many challenges on them. The development of new systems and techniques has become a priority in order to enable organizational management to face these challenges and to achieve development and improvement at the level of different organizational processes and activities (Al-Qatawneh and Mobaideen, 2017).

Also, new administrative concepts have emerged such as total quality management, competitive advantage, knowledge management and administrative empowerment to enhance different organizations' abilities to cope with new changes and fulfill modern societies' requirements (Obayes, 2014). In other words, one can say that administrative empowerment has emerged as a strategy that can be used to cope with the ever-changing environments (Al-Asoufi and Akhorshaideh, 2017; Insan, 2013).

Administrative empowerment emerged as a concept at the end of the 1980s as a result of the increased attention paid to humanitarianism within organizations and the shift in administrative thought from the "command and empowered organization" to "the powered organization" in order to achieve competitive advantage (Aburuman, 2016). Administrative empowerment emerged as one of the most critical issues that can be used to fulfill employees' needs and achieve organizational success (Al Mahasneh, 2016). One can conclude that administrative empowerment may be regarded as a modern approach for open administration (Mattar and Atteia, 2015).

Regarding the advantages of empowering employees within organizations, empowerment has the ability to improve staff performance through redesigning work processes and finding innovative ways to correct errors. Empowerment also can maximize



potential and enhance organizational competitive advantage. Empowering environments provide people with the necessary information to perform their duties and to participate in decision making. Empowerment has the ability to improve the quality of products and services being provided (Badah, 2012; Kimolo, 2013). There is a strong relationship between employee empowerment and positive organizational outcomes represented in innovation, effectiveness and superior performance (Lau, 2010). Also, empowerment has positive effects on employees' cooperation, entrepreneurship, teamwork, self-confidence and independent thinking (Abu Elnaga and Imran, 2014).

Leaders are the main agents responsible for organizational success. In order to accurately perform their roles, they must manage, direct and stimulate human assets. In addition, they must do their best to identify the different factors that could affect human resources' motivation and satisfaction within work environments (Aburuman, 2016).

Empowerment practiced by organizational leaders can have great effects on employees' job satisfaction. Many researchers confirmed that empowerment, with its varied dimensions, has positive and significant relationships to employees' job satisfaction (Abraiz *et al.*, 2012; Akbar *et al.*, 2011; Kokila, 2016; Pelit *et al.*, 2011; Theron, 2010).

Problem statement

Efficient and competent employees are the most critical resources in any organization (Silva, 2014). Empowerment has emerged as an effective mechanism to overcome weaknesses associated with traditional management styles and stereotypical organizational structures and to widen employees' responsibilities in modern organizations (Kanani and Shafiei, 2016).

The problem lies in the fact that most directors and employers in developing countries believe that granting administrative empowerment to employees will negatively affect them by breaking down their leadership positions and weakening their ability to control employees, and as a result, they resist the idea of administrative empowerment (Al-Ha'ar, 2016). In addition, many Arab organizations suffer from several administrative problems such as centralization, hierarchical administration levels, conventional communication lines and excluding employees from participation in different organizational activities (Aburuman, 2016; Musaad and Zhuo, 2017). Accordingly, there is a serious need to restructure the administrative system within these organizations.

At the State of Kuwait level, one can observe that the educational system suffers from many challenges, among them the centralized educational system (AlShammari, 2010). Thus, there is an urgent need to develop the current administrative reform efforts at different sectors in Kuwait, especially at the higher education level. Ghareeb (2010) showed that bureaucracy and lengthy administrative procedures are considered as main obstacles facing Kuwait University. Abedeen (2015) revealed that centralized management employed at tertiary and applied colleges in Kuwait ignored the staff's needs and deprived them of the right to express their opinions about the different challenges they face. Reflecting upon the university staff, various empirical studies have indicated that there are various factors which impact their job satisfaction level. As per the study of Shamra and Manani (2012), the factors include the nature of the work, the behavior of the departmental head, the pay as well as the wages. The same study also reported the negative association between university staff satisfaction and job stress. However, the findings of these empirical studies cannot be applied to the Kuwaiti academic staff given its highly contempORIZED education environment. The Kuwaiti higher education system is free to adopt a divergent system of education. Though the American system is adopted by just one state university (Kuwait University) as well as a college (Public Authority for Applied Education and Training), with variation in relation to the country culture as well as language, where the

rest of the universities practice different system such as British, American and Australian systems (Al-Mutairi *et al.*, 2017).

Due to this, the educational environment of the Kuwaiti institute varies in terms of the curriculum practiced, the compensation provided, the recruitment done, the assessment performed as well as the crafting of the promotion policies, which leads to the diversion of the satisfaction level among the academic staff. This variation emphasizes developing an understanding of the academic staff satisfaction in relation to the administrative empowerment. The significance of this paper stems from the fact that the satisfaction of the academic staff can substantially impact the teacher performance causing a major impact on the educational outcomes of the country as a whole. The understanding of the job satisfaction of the university staff highlights the improvement areas which can help the policymakers in determining the right recruitment, retention and practicing procedures for increasing their productivity and satisfaction while mitigating the negative consequences which can result due to their low level of satisfaction.

Furthermore, despite the fact that nonacademic employees in higher education institutions contribute to the survival of colleges and universities presently, little attention has been paid to the empowerment strategies that encourage innovative behaviors among them (Lau, 2010). In Kuwait, informal leadership rarely contributes to the academic literature because the centralized educational structure is the dominant management style (Alsaleh, 2014).

Investigating job satisfaction among administrators in higher education institutions is considered necessary to improve the quality of processes and activities taking place within these institutions (Noltmeyer, 2014). Also, identifying administrators' job satisfaction levels at universities will help in improving the higher education system's output (Azeem and Quddus, 2014).

Taqi (2015) showed that the idea of staff satisfaction in Kuwait higher education can be regarded as a comprehensive campus experience, especially when keeping in mind that one of Kuwait University's strategic goals is to create an attractive environment for highly qualified staff (Kuwait University, 2015). Considering that there is a lack of studies that address empowerment and job satisfaction among nonacademic Kuwait University staff and that there are many deficiencies associated with the administrative structure in Kuwait higher education represented in bureaucracy and centralization, the problem statement revolves around investigating administrative empowerment among Kuwait University staff and its effect on their job satisfaction.

Study significance

This study's significance stems from a desire to improve Kuwaiti University staff's performance and satisfaction levels, especially while taking into account their roles in improving the higher education quality in the State of Kuwait. The study posited that empowering these employees will enable them to do their best for the sake of the work environment, which will have positive effects on their job satisfaction. The study's significance also stems from the fact that it is the first study, according to my knowledge, that has been dedicated to identifying the effect of administrative empowerment on job satisfaction among Kuwait University staff.

Study limitations

- Objective limitations: this study was confined to discussing administrative empowerment among Kuwait University staff and its effect on their job satisfaction. No other issues were discussed.
- Human limitations: this study was confined to Kuwait University administrative staff.

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- Time limitations: this study was applied during the second term of the 2017–2018 academic year.
 - Place limitations: this study was confined to Kuwait University within the State of Kuwait.

Literature review

The world has been witnessing radical changes and forces represented through globalization, severe competition, the information revolution, and economic and political changes that have their effects on different sectors within developed and developing countries (Al-suhimat, 2016). These forces have been accompanied by exclusion of solid hierarchy styles and the emergence of new administrative concepts such as decentralization, authority delegation and empowerment (Kaymakçı and Babacan, 2014; Musaad and Zhuo, 2017).

Empowerment has appeared as a central theme in management and leadership practices to help organizations achieve their goals and become more competitive (Ramesh and Kumar, 2014). It is based on the idea that enabling employees to freely perform their duties will help in creating an organizational environment based on satisfaction, motivation and responsibility (Obayes, 2014). Empowerment can be regarded as one of the modern mechanisms that can be used to manage human resources and make full use of their capabilities, which can have positive effects on employees' motivation and innovation to achieve the organization's objectives (Al-Magableh and Otoum, 2014). Also, employee empowerment has positive effects on the organization's overall performance (Dabo and Ndan, 2018). Alipour *et al.* defined empowerment as "a capital of motivation and knowledge which has the power of doing everything excellent" (p. 31).

Administrative empowerment helps employees to exercise full authority and take responsibility for various job tasks. Diab defined administrative empowerment as a delegation of "authorities and responsibilities to the employees and give them the freedom to perform the work in their own way without or little interventions" (p. 823). In this context, administrative empowerment enhances organizations' abilities to face internal and external challenges, which is considered essential for organizations' growth and prosperity (Al-Qatawneh and Mobaideen, 2017). It also enables employees to act freely, empowers them to participate in the decision-making process, and provides them with brainstorming and creative-thinking opportunities. Salameh *et al.* (2011) also states that in a higher level of education, the staff is more empowered and further plays a key role in the management process of the institute. Empowerment helps in facilitating information flow and in enhancing dialogue and understanding, which have positive effects on organizational climate and organizational performance (Al-Ha'ar, 2016). Benefits of employees' empowerment can be discussed by shedding light on two main issues clarified by Salajegheh and Pirmoradi (2014) as follows:

- (1) Change in management and leadership: this change can be touched by creating challenging tasks, increasing employees' authority, developing a value system within the organization and concentrating on the group rather than on individual activities.
- (2) Change in employees' performance: empowerment enables employees to express their opinions, look for solutions to different work challenges they might face, and praise others' goodness.

Empowerment helps in creating democratic organizational environments where employees can participate in the decision-making process and freely express their opinions (Abraiz *et al.*, 2012; Ulutaş, 2018). In addition, employee empowerment can have positive effects on employees' achievement motivation (Tutar *et al.*, 2011). Empowered employees are less likely to quit their work environments, which, as a result, increases their intention to stay (Oluwaseun, 2016). Also, empowerment enhances employees' trustworthiness and promotes

productivity (Kokila, 2016). It enables employees to acquire needed knowledge and job skills and to improve their work processes (Fernandez and Moldogaziev, 2015).

For the empowerment process to be effective, there must be certain requirements for its application. Empowerment within different organizations should be supported by top management in order to ensure effective implementation with its varied dimensions (Nzube and Bakari, 2012). Mohammadnia *et al.* (2013) found a positive significant correlation between transformational leadership and employee empowerment. Worthy here to mention is that organizational managers usually use empowerment as an effective mechanism for motivating employees to do their best and express their work talents (Khalili *et al.*, 2015; Negwaya *et al.*, 2014).

Also, training can be a critical factor in this issue. Training employees on how to undertake the responsibility of empowering tasks can have positive effects on the empowerment process. Saremi and Nezhad (2014) revealed that there was a significant relationship between training implementation and employees' empowerment.

Consistent with the idea mentioned above, Sharma and Sharma (2014) revealed that there was a significant effect of training practices and employee empowerment on organizational productivity. Also, the prevailing organizational culture can affect empowerment levels among employees. Zarandi *et al.* (2017) confirmed that organizational culture had positive, direct and significant effects on improving employees' feelings of psychological empowerment (Figure 1).

Worthy here to mention is that organizations granting freedom and flexibility to employees make employees feel empowered, allowing them to deliver high-quality output (Ramesh and Kumar, 2014). The process of empowering employees goes through six steps identified by Alipour *et al.* (2013) as follows:

- Step 1: definition and transfer of empowerment: the first step in the process is that appropriate answers should be prepared for managers' and employees' questions.
- Step 2: setting goals and strategies: this step depends on our definition of empowerment that is determined according to the organization's definition of the empowerment of desired strategies and targets.
- Step 3: training: this stage is supported by the knowledge and skills more beyond the scope of traditional training.
- Step 4: matching organization structure: the actions take place in this step to promote employees' performance and productivity up to the desired level, actions such as:
 - elimination of non-value-added jobs;
 - combination of jobs per unit; and
 - reduction of management and supervision layers.

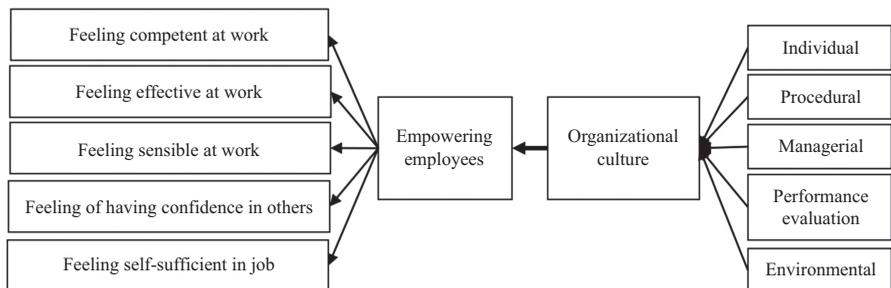


Figure 1.
Organizational
culture framework

Source: Zarandi *et al.* (2017, p. 21)

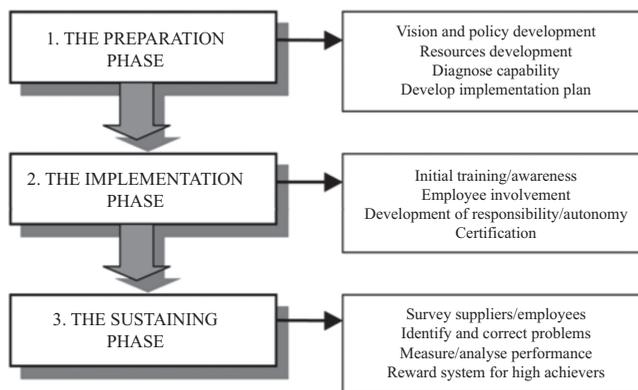
- Step 5: an adaptation of an organization's systems: at this stage, all information systems of evaluating performance that is related to employee's management and control are suspected while empowering process.
- Step 6: evaluation and modification: at this stage, the extent of achieving goals will be measured and deviations are identified (p. 31).

Other researchers think that the employee empowerment process goes through three stages: the preparation phase, the implementation phase and the sustaining phase. These phases are shown in Figure 2.

Empowerment does not imply that administrative management gives up its responsibility to lead the organization, but rather, it assumes that the management's responsibility is to create and foster an environment characterized by trust and open communication with employees (Abu Elnaga and Imran, 2014). Similarly, Moalusi (2016) confirmed that administrative empowerment does not mean that employees are allowed to control the different processes within the organization, but rather, it confirms the view that employers must decide what aspects of work activities should be delegated and to whom.

Based on the above, one can conclude that organizations must pay enough attention to enhance their assets, especially their human assets. Developing human assets' capacities is considered necessary for highly motivated, satisfied and innovative human resources (Abu Elnaga and Imran, 2014). Human assets are considered one of the most important assets in higher education (Mehrad, Hamsan, Redzuan and Abdullah, 2015). Various studies have stated that in higher education, the development of the employees takes place through empowerment. Such as the study by Grensing-Pophal (2010) supplies that by empowering employees their commitment and loyalty improves as well as their conscientiousness. Giorgidze (2016) further adds that increasing employee involvement in decision-making process and empowering them serves as a continuous improvement mechanism. According to recent studies, empowering mechanism is said to be the stimulus for the cusses of the organization (Choi *et al.*, 2016; Valsania *et al.*, 2016).

At the nonacademic staff level in higher education institutions, one can notice that empowerment has many positive effects on employees' performance. Hanaysha (2016) tested the effects of employee empowerment on employee productivity in the higher education sector at public universities in Northern Malaysia; the results showed that employee empowerment had a significant positive effect on employee productivity.



Source: Motebele and Mbohwa (2013, p. 894)

Figure 2.
Employee
empowerment
framework

There are certain disadvantages associated with employee empowerment within organizations, such as employees' abuse of the power granted to them, some employees' inability to take on too much responsibility, and an absence of the group's spirit. In order to overcome these challenges, management should do its best to delegate authority and enhance employees' self-autonomy and self-motivation. In addition, the generalization of this experience faces a lot of challenges such as the fact that despite some employees enjoying enrichment in their choices, their employers still control their actions (Saleem *et al.*, 2012).

Regarding different organizations' effectiveness, one can notice that this is usually determined by the number of efficient employees who can show distinguished job performance (Rahim and Omar, 2017). The degree of job performance is usually determined by job satisfaction. Islam and Islam (2011) defined job satisfaction as "the mental happiness and positive attitude held by the employee towards the job and experienced when working and in the external environment" (p. 185). This study has operationally defined it as administrative staffs' positive inner feelings of happiness, fulfillment and enjoyment stemmed from their job experiences at Kuwait University. Consistent with this, Dizgah *et al.* (2012) showed that there was a significant relationship between job satisfaction and innovative job performance among employees.

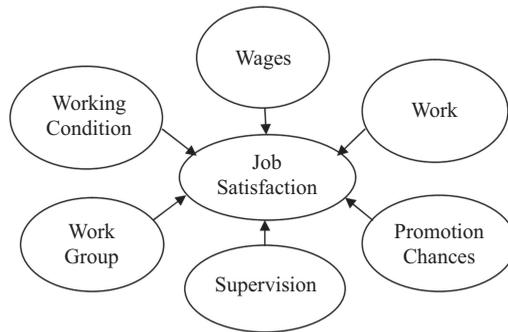
Employee job satisfaction can be regarded as a critical factor affecting the overall organizational success (Islam and Islam, 2011). Employee job satisfaction is a complex phenomenon because it is influenced by several factors like salary, employees' relationships with co-workers, promotion, recognition of employees' potentials, participation in decision making, financial security, opportunities for training and development, and fulfilling employees' demands and requirements (Halagalimath and Desai, 2012; Islam and Islam, 2011; Malik *et al.*, 2012; Victor, 2014). Madanat (2018) indicated that empowerment escalates employee creativity and initiative improving his commitment to work more which ultimately improves his job satisfaction.

Similarly, the study by Hashim and Mahmood (2011) has also explored the job satisfaction among the private and public universities of Malaysia. It found that despite ranking salary as the least satisfied they were satisfied with the context and the content of the job due to other variables such as their involvement in the consultancy work, its governance and diverse role. Another study by Mustapha (2013) on public universities found that the satisfaction level of the employees is dependent on monetary rewards. A recent study by Ahmad and Abdurahman (2015) stated that practices in the work environment significantly affect the university staff satisfaction level. Ulutaş (2018) supplies that satisfaction of the employees is also dependent upon the empowerment opportunities which the workplace offers them. Giorgidze (2016) study on the university staff also endorses the positive relationship between empowerment and job satisfaction level of the staff. Another study by Mehrad, Redzuan and Abdullah (2015), Mehrad, Hamsan, Redzuan and Abdullah (2015) also highlighted the presence of the development and supportive practices provided by the university impacts the job satisfaction of the university staff and promotes the development of the effective productive behavior.

The different factors that can affect employees' job satisfaction can be reviewed in Figure 3.

In addition to the above, perceived autonomy is considered a critical factor that can affect employees' job satisfaction (Anjum *et al.*, 2014). Perceived autonomy reflects the degree of empowerment granted to employees to freely do their jobs. Accordingly, empowerment levels can affect employees' job satisfaction.

Efficient administrators who show superior performance are key in higher education institutions' success and are pillars of the university's executive functions. In order to sustain nonteaching university employees with distinguished performance, it is important to determine their job satisfaction levels (Azeem and Quddus, 2014). Inuwa (2016) stated that there was a statistically significant relationship between job performance and job satisfaction among nonacademic university staff. Satisfied nonacademic employees are



Source: Tatareddy (2012, p. 49)

Figure 3.
Employee job
satisfaction
framework

more committed to higher education institutions in comparison to employees who have lower satisfaction levels (Adekola, 2012). Empowerment can also affect nonteaching employees within universities.

Motebele and Mbohwa (2013) examined the relationship between overall job satisfaction and the facets of employee empowerment and organizational effectiveness at South African universities. The results revealed that empowerment affected job satisfaction among employees to some extent. Similarly, Tahir and Hanaysha (2016) examined the effects of employee empowerment on employees' job satisfaction at public universities in Northern Malaysia. The results indicated that employee empowerment had a significant positive effect on job satisfaction. In addition, Abdel Azeem and Sayed (2010) investigated the influence of empowering employees on job satisfaction in youth care administration faculties at Assiut University in Egypt. The results stated that there was a statistically significant relationship between employees' empowerment and job satisfaction. Particularly for universities, the satisfaction of the staff is just as crucial as for the students as it directly impacts the management of the university (Hamburg, 2012). The understanding of the administrative staff is significant as it improves the quality of the management as well as their satisfaction level.

Study questions

- (1) What is the administrative empowerment level among Kuwait University staff according to empowerment dimensions (authority delegation, self-motivation, group work, communication and information flow, and participation in decision making)?
- (2) What is the job satisfaction level among Kuwait University administrative staff?
- (3) Is there a relationship between administrative empowerment and job satisfaction among Kuwait University administrative staff?
- (4) Are there any statistically significant differences in the study sample responses regarding administrative empowerment and job satisfaction attributed to the study variables (gender and years of experience)?
- (5) Is it possible to predict the job satisfaction level among Kuwait University administrative staff through administrative empowerment dimensions?

Study objectives

This study's main objective was to identify the administrative empowerment level among Kuwait University staff according to empowerment dimensions (authority delegation,

self-motivation, group work, communication and information flow, and participation in decision making) and determine their job satisfaction levels. It also aimed to reveal the relationship between administrative empowerment and job satisfaction among Kuwait University staff. In addition, the study sought to identify any statistically significant differences in the study sample responses regarding administrative empowerment and job satisfaction attributed to the study variables (gender and years of experience). Finally, the study sought to identify the possibility of predicting job satisfaction level among Kuwait University staff through administrative empowerment dimensions.

Conceptual framework and hypotheses

- H1. There is a positive association between administrative empowerment and job satisfaction.
- H2. There is a positive association between communication and information flow and job satisfaction.
- H3. There is a positive association between delegation of authority and job satisfaction.
- H4. There is a positive association between group work and job satisfaction.
- H5. There is a positive association between participation in decision making and job satisfaction.
- H6. There is a positive association between self-motivation and job satisfaction (Figure 4).

Methodology of the study

Study design

The present study has employed a descriptive study design. For this, the quantitative approach is adopted as it gathers the data in an effective and efficient manner.

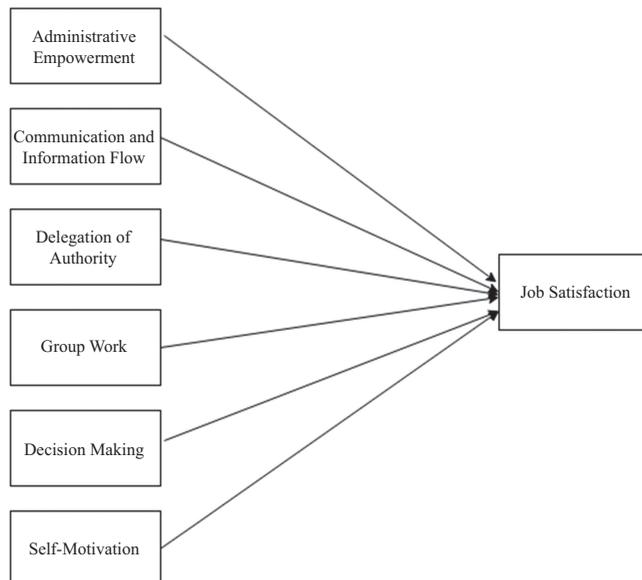


Figure 4.
Conceptual framework

Study population

The study population comprised all administrative staff ($N = XX$) at Kuwait University during the second semester of 2017–2018. The sample of the study consisted of 115 administrative employees. The participants were selected in a convenient way. The participation came from both humanities faculties (e.g. social sciences, sharia, law, arts and education) and scientific colleges (e.g. medicine, architecture, engineering and petroleum, science and pharmacy).

Ethical consideration. Prior to the performance of the study, approval was acquired from the university authorities. Following it, the participants were communicated the objective of the paper. The participants who showed a willingness to participate were recruited in the study. Written consent was also obtained from the participants.

Study tools

To achieve the objectives of the study and answer its questions, the study used the descriptive-analytic method, which relies on questionnaires as the study tool. The questionnaire consists of three parts, where the first part collected demographic details, second part comprised of 30 items related to administrative empowerment, which collect information for over five dimensions namely delegation of authority, self-motivation, group work, communication, and information flow, and participation in decision making. While the third part constituted of 29 items centered on job satisfaction. All the questions were based on a five-point Likert scale (from 5 “very high” degrees to 1 “very low”). To analyze and estimate the responses of the sample, after examining previous studies, the study sample for administrative empowerment and job satisfaction was determined at three high, intermediate and low levels.

This study divided the highest and minimum values for an answer in the study tool by the number of three levels (high, medium, low). This process is explained as follows: $(5-1) \div 3 = 1.33$. This value is equal to the length of the category between the three levels (high, medium and low):

$$1.00 + 1.33 = 2.33$$

$$2.33 + 1.33 = 3.66$$

$$3.66 + 1.33 = 5.00.$$

Thus, the ranges for the high, moderate and low values of the arithmetic averages for availability were calculated per the following ranges: 1.00–2.33 for low values; 2.34–3.66 for moderate values; and 3.67–5.00 for high values.

Study tool validity. This study calculated the validity of the questionnaire by arbitrating it to a group of specialized professors and experts in the Faculty of Education and specialists in this field in the State of Kuwait. Seven arbitrators expressed their opinions on the suitability of the tool. Furthermore, this study calculated the validity of the tool’s internal consistency to determine the consistency of each item with the total score of its dimension by calculating the correlation coefficient of the sample ($n = 20$). This step resulted in a positive correlation of all items at level 0.01, which indicates that the first field (administrative empowerment) and the second field (job satisfaction) had a good degree of internal homogeneity. Tables I and II show these results.

Structural validity. This study verified the validity of the questionnaire by calculating the structural validity of the first field (administrative empowerment) by detecting the correlation of the five dimensions to the total degree of the first field. This resulted in a positive correlation between each dimension and a total score of the field at level 0.01.

Table I.
Correlation coefficients between the degree of each item and dimension (administrative empowerment)

Item	Correlation degree	Item	Correlation degree	Item	Correlation degree
Delegation of authority		5	0.760**	3	0.917**
1	0.751**	6	0.906**	4	806**
2	0.606**	Group work		5	644**
3	0.880**	1	0.947**	6	0.788**
4	0.644**	2	0.716**	Participation in decision making	
5	0.647**	3	0.827**	1	0.821**
6	0.856**	4	0.914**	2	0.702**
Self-motivation		5	0.870**	3	812**
1	0.794**	6	0.865**	4	0.834**
2	0.534*	Communication and information flow		5	761**
3	0.749**	1	0.848**	6	0.805**
4	0.812**	2	0.951**		

Notes: $n = 20$. **Significant at 0.01

Table II.
Correlation coefficients between the degree of each item and total grade (job satisfaction)

Item	Correlation degree	Item	Correlation degree	Item	Correlation degree
1	0.659**	11	0.648**	21	0.723**
2	0.833**	12	0.807**	22	0.837**
3	0.676**	13	0.859**	23	0.751**
4	0.810**	14	0.675**	24	0.747**
5	0.585**	15	0.828**	25	0.805**
6	0.701**	16	0.770**	26	0.760**
7	0.731**	17	0.448*	27	0.849**
8	0.708**	18	0.764**	28	0.804**
9	0.852**	19	0.731**	29	0.818**
10	0.799**	20	0.875**		

Notes: $n = 20$. **Significant at 0.01

The strongest was with the third dimension (group work), and the least strong was with the fifth dimension (participation in decision making). These results are shown in Table III.

Study tool reliability. The study used Cronbach's α as a reliability coefficient for my randomly selected sample of 20 administrative staff with a value of 0.952 and between the dimensions of 0.774 and 0.922. The second field had a value of 0.972, which means that the two fields' sentences came with a high degree of reliability, as shown in Table IV.

Statistical processing methods

The appropriate statistical treatments will be performed after the data are entered into the computer for analysis using the SPSS program, by extracting the frequencies, percentages of the sample description, arithmetic means and standard deviations of questionnaires

Table III.
Dimensional correlation coefficients with a total degree

No.	Dimensions	Correlation degree
1	Delegation of authority	0.901**
2	Self-motivation	0.929**
3	Group work	0.925**
4	Communication and information flow	0.861**
5	Participation in decision making	0.643**

Notes: $n = 20$. **Significant at 0.01

sentences as a whole. To answer the first and second questions, this study extracted the arithmetic means and standard deviations of the sample responses. For third questions responses, it used a two-way analysis of variance for the arithmetic means and standard deviations to identify the differences between the means of the responses from the study sample, according to the variables of nationality and years of experience. Whereas, Pearson correlation coefficient was used for the fourth question. Also, it used a multiple regression analysis to identify the effect of the statistical significance of the degree of administrative empowerment on job satisfaction asked in the fifth question. Moreover, PLS-SEM has been used to identify the associations between employee empowerment dimensions and job satisfaction using SmartPLS version 3.2.8.

Results of field study

Based on the responses achieved, it was found that among the population of 115, 42 (36.5 percent) of the participants were male and 73 (63.5 percent) were female. Table V summarizes the descriptive characteristics of the sample.

Table VI presents construct validity based on factor loading of construct items. The threshold value of factor loading should be 0.60 based on the requirements. Therefore, the model displays construct validity values greater than 0.60. Nonetheless, it is advised that this figure should be taken as round figure so that it can fulfill 0.60 for the construct validity.

The discriminant validity tests are the measurements that are not assumed to be interrelated which are actually unrelated. The discrimination among research variables construct are established on theoretical grounds. In a similar way, it calculates the presence of variance to confirm their separate functionality and individuality among research constructs as supported by the theory. Table VII shows all the construct variables based on AVE square root and indicated that every particular variable construct has higher values than other constructs. Table VIII shows the HTMT criterion for all the construct variables

Fields	Item No.	Cronbach's α
1 Delegation of authority	6	0.774
2 Self-motivation	6	0.858
3 Group work	6	0.922
4 Communication and information flow	6	0.874
5 Participation in decision making	6	0.807
The first field: administration empowerment	30	0.952
The second field: job satisfaction	29	0.972

Table IV.
Values of the statistical processing of the internal consistency coefficient Cronbach's α according to field of study

Variable	Category	Frequency	%
Gender	Males	42	36.5
	Females	73	63.5
Participating administrative entities	Humanities faculties	72	62.6
	Scientific colleges	32	27.8
	Construction and maintenance management	11	9.6
Years of experience	Less than 5 years	27	23.5
	5–10 years	32	27.8
	11–15 years	28	24.3
	More than 15 years	28	24.3

Table V.
Participant demographics

based on AVE square root and exhibited that every single construct possess higher values as compared to others.

Table IX has shown the correlations among all construct items and revealed strong correlations between delegation of authority and administrative empowerment, self-motivation and delegation of authority, self-motivation and administrative empowerment, self-motivation and communication and information flow. Moreover, the findings have shown positive and strong correlations between job satisfaction and all other constructs.

Table X has summarized path coefficients obtained using PLS-SEM for identifying the significant correlation between employee empowerment and job satisfaction. From the findings, the study has shown a positive association between administrative empowerment and job

Table VI.
Construct validity and reliability

	Cronbach's α	Rho_A	Composite reliability	Average variance extracted (AVE)
Administrative empowerment	0.939	0.947	0.948	0.607
Communication and information flow	0.909	0.917	0.932	0.733
Delegation of authority	0.838	0.843	0.886	0.610
Group work	0.918	0.922	0.937	0.711
Job satisfaction	0.951	0.952	0.957	0.630
Participation in decision making	0.887	0.955	0.902	0.608
Self-Motivation	0.801	0.816	0.882	0.714

Table VII.
Discriminant validity

	Administrative empowerment	Communication and information flow	Delegation of authority	Group work	Job satisfaction	Participation in decision making	Self- motivation
Administrative empowerment	0.779						
Communication and information flow	0.637	0.856					
Delegation of authority	0.730	0.640	0.781				
Group work	0.630	0.811	0.707	0.843			
Job satisfaction	0.799	0.661	0.699	0.737	0.794		
Participation in decision making	0.555	0.547	0.578	0.565	0.648	0.780	
Self-motivation	0.707	0.709	0.753	0.798	0.783	0.611	0.845

Table VIII.
HTMT criterion

	Administrative empowerment	Communication and information flow	Delegation of authority	Group work	Job satisfaction	Participation in decision making	Self- motivation
Administrative empowerment							
Communication and information flow	0.682						
Delegation of authority	0.817	0.722					
Group work	0.673	0.874	0.800				
Job satisfaction	0.830	0.691	0.775	0.787			
Participation in decision making	0.545	0.533	0.600	0.535	0.582		
Self-motivation	0.800	0.816	0.904	0.928	0.882	0.622	

satisfaction ($t = 0.741$; p -value = 0.000). In addition, the study has found a positive and significant relationship between group work and job satisfaction ($t = 0.116$; p -value = 0.015). Moreover, a significant association has been found between participation in decision making ($t = 2.088$; p -value = 0.037) and self-motivation ($t = 2.572$; p -value = 0.010) with job satisfaction.

Discussion

The results of the study show that there exists a permanent association between the employee empowerment and his job satisfaction. It is evident from the mathematical means of job satisfaction as a whole were 3.81, reflecting the enjoyment of the respondents with a high level of job satisfaction. The found results are consistent with the findings of Langfred and Rockman indicating that the empowerment induces in autonomy which improves indulgence in work improving satisfaction. Wang *et al.* (2018) state that empowerment improves the employee psychological contact with the institute improving his institute perception and increasing his commitment to the institute.

The present study also showed the differences in the level of job satisfaction which are attributed to the effect of gender, especially in favor of males. Joo *et al.* (2016) also support these results stating the gender attributes impact the satisfaction level of the employee keeping into consideration the empowerment aspect. However, the study results are conflicting with the findings of Crites *et al.* (2015) which found no impact of gender on job satisfaction level in relation to the empowerment.

The results demonstrate significant differences at a level of 0.01 in the level of administrative empowerment due to the variable of experience, which favored longer experiences. This is parallel to the research of Lee *et al.* (2016) which supplements that providing empowerment opportunities to the employee improves their satisfaction level with the job.

	Administrative empowerment	Communication and information flow	Delegation of authority	Group work	Job satisfaction	Participation in decision making	Self-motivation
Administrative empowerment	1.000	0.637	0.730	0.630	0.799	0.555	0.707
Communication and information flow	0.637	1.000	0.640	0.811	0.661	0.547	0.709
Delegation of authority	0.730	0.640	1.000	0.707	0.699	0.578	0.753
Group work	0.630	0.811	0.707	1.000	0.737	0.565	0.798
Job satisfaction	0.799	0.661	0.699	0.737	1.000	0.648	0.783
Participation in decision making	0.555	0.547	0.578	0.565	0.648	1.000	0.611
Self-motivation	0.707	0.709	0.753	0.798	0.783	0.611	1.000

Table IX.
Correlations

	Original sample (O)	Sample mean (M)	SD	T-statistics (O/STDEVI)	p-values
Administrative empowerment → job satisfaction	0.450	0.439	0.095	4.741	0.000
Communication and information flow → job satisfaction	-0.060	-0.058	0.069	0.858	0.391
Delegation of authority → job satisfaction	-0.046	-0.042	0.081	0.563	0.574
Group work → job satisfaction	0.242	0.255	0.116	2.088	0.037
Participation in decision making → job satisfaction	0.172	0.179	0.071	2.434	0.015
Self-motivation → job satisfaction	0.243	0.232	0.094	2.572	0.010

Table X.
Path coefficients

To answer the fifth question (Is it possible to predict the level of job satisfaction among Kuwait University's administrative staff through the dimensions of administrative empowerment), the dimensions of administrative empowerment may explain the 67.5 percent variation in job satisfaction. This means that the level of job satisfaction of the study's sample can be predicted to a strong degree by identifying the availability of administrative empowerment dimensions.

Moreover, certain limitations while conducting study were observed such as the study only evaluated the impact of the employee empowerment on the job satisfaction for the university and college staff which limits its application to other sectors. Moreover, the population was derived from only the second semester from one university which limits the results generalizability due to the difference in the management, culture and motivational factors.

Further, since the primary focus was on two variables, i.e. job satisfaction and employee empowerment, therefore, it suggests conducting more research on these factors while considering a third new variable. The study proposes to conduct more research on the administrative empowerment of employees in education and its relationship to job satisfaction and motivation for achievement. It suggests using a qualitative approach using a model which can highlight a new perspective on this subject matter.

Conclusion

The study concluded that there is a strong association between employee empowerment and job satisfaction, particularly for administrative staff. Based on the results, it suggests an increase of the administrative staff knowledge base in higher education in relation to empowerment as it escalates their efficiency. The administrative staff inclusion is crucial in the study as it has not been extensively explored before. The outcomes of the research serve as the catalyst for the exploration and development of the university staff and their decision-making capacity which is an understudied area.

Based on the results of this study, the study suggests providing training programs for increasing the innovative spirit and further develops their decision-making skills. Along with it, it suggests activating laws and provisions related to the empowerment of workers in administrative-work laws and regulations while also clarifying their roles. On the part of the administration, it recommends provision of necessary resources and materials that will contribute for forming an appropriate working environment for the employees supporting the management systems.

Various initiatives must also be introduced for identifying the regulatory obstacles that prevent the dissemination and resolution of the policy and culture of empowerment, which also focuses on the authority delegation, responsibility allocation and adoption of new strategies. Using a reward strategy is also recommended for improving employee satisfaction. It also suggests the educational institutes to learn from the previous experiences of organizations and institutions in other countries in the practice of administrative empowerment overcome the possible errors.

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Further reading

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Indicators to prevent university drop-out and delayed graduation: an Italian case

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Abstract

Purpose – Research on the association between individual characteristics of undergraduate students, drop-out and delayed graduation is still evolving. Therefore, further evidence is required. The paper aims to discuss this issue.

Design/methodology/approach – This paper reports on an empirical study examining the relationship between students' individual characteristics and delayed graduation. The analysis is based on a sample of 1,167 students who have registered on and have completed a full-time undergraduate programme in Italy. Using a Probit model, the findings document the individual, background and environmental indicators that play a role in explaining delayed graduation.

Findings – The study observes that students who commute to university perform better than those residing on campus. Other factors increasing the probability of completing the undergraduate programme on time include individual characteristics (e.g. gender and age), student background (family income, education), institutional environment (teaching and research quality) and student satisfaction. Finally, some policy implications are discussed.

Social implications – A direct policy implication of these findings is that supporting academic staff in order to enhance their performance in both research and teaching has a positive effect on the performance of the students.

Originality/value – This paper contributes to the debate on the impact of institutional quality on students' performance, aiming to address the question of balance between teaching and research orientation.

Keywords Undergraduate, Student satisfaction, Delayed graduation, Drop-out, Teaching and research quality

Paper type Research paper

1. Introduction

The Lisbon Strategy (March 2000), the Bologna process (Eurydice, 2010) and the training priorities provided by Europe 2020 (EU2020) are committed to the establishment of a knowledge economy that promotes employability and the development of human capital via lifelong learning and social equity (EC, 2009; Dion, 2005).

One of EU2020's top priorities is to see an expansion of education at all levels throughout Europe, with two specific goals: to reduce school drop-out by 10 per cent and to increase the number of adults between the ages of 30 and 34 in higher education by 40 per cent. These are no trivial goals for Italy given the declining numbers of students enrolling onto undergraduate programmes and the increasingly long time it takes for them to complete their degrees. According to Eurostat (2014), Italy ranks towards the lower end of the spectrum in respect of its graduate numbers, followed only by the Czech Republic, Romania and Slovakia. Among the

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25–34 age group, only 19 per cent of the Italian population have obtained a bachelor's degree, compared to a European average of around 30 per cent.

According to Schnepf (2015), Italy has the highest drop-out out rate out of 15 European countries. Furthermore, the Italian student's decision to drop-out is permanent, in comparison with their European peers, who decide to return and complete their degree later in life.

In Italy, non-completion of degrees affects 40 per cent of enrolled students, whilst in other Western European countries the figure varies between 21 and 28 per cent (Quinn, 2013).

D'Hombres (2007) asserts the importance of studying the Italian case, which is characterised by high rates of university drop-out and low graduation rates. These are important indicators of the inefficiency of the tertiary education system.

Therefore, it seems relevant to focus on the situation in Italy in order to understand which factors influence student academic behaviour and progression. Student drop-out and delayed graduation have been recognised as two important issues in higher education institutions in many European Countries (Bennet, 2003; Di Pietro and Cutillo, 2008; Heublein, 2014). This paper aims to analyse students' performance in terms of retention and completion (Costantini and Vitale, 2010; Grilli *et al.*, 2016), taking into account relevant individual, background and environmental factors.

2. Literature review

Student performance has been studied from a range of economic, psychological and sociological perspectives in order to understand which factors affect behaviour and decision making. Educators, academics and policy makers have linked student performance to factors relevant to these perspectives along with the quality of higher education and the suitability of institutions for individual students (Leveson *et al.*, 2013; Zotti, 2015; Bowles and Brindle, 2017).

In general, two main lines of research can be distinguished. The first refers to the analysis of the role played by the “macro-categories”, such as the socio-educational background of the student.

The second strand of research focuses on the impact of “micro-categories” on student performance. Regarding the first research area, relevant studies have identified the influence of social indicators including gender, socio-economic status, family background and ethnic group (Aikens and Barbarin 2008; Thiele *et al.*, 2016; Ghignoni (2017). In the Italian context, Cingano and Cipollone (2007) used national institutional data (ISTAT: Italian National Institute of Statistics) to highlight the importance of socio-familial backgrounds of students. For example, the probability of university drop-out decreases in relation to the number of years the father spends in education. This aspect emphasises the impact of parental educational background on the academic performance of their offspring. Other important determinants for student drop-out include student educational background, academic degree performance and personal characteristics such as gender and place of residence. In this regard, Belloc *et al.* (2011) showed that high drop-out probability is linked to secondary school final marks and low individual students' performance. Boero *et al.* (2005) adopted a probit model (also used in the present research) to evaluate the impact of the Italian academic reform (2001) on students' withdrawal and progression and has demonstrated that the type of high school chosen by students and their final grade have a statistically significant effect on the probability of drop-out.

Using data from the five waves of the Italian Longitudinal Household Survey, through the analysis of cross-tabulation and multinomial logistic regression models, Triventi and Trivellato (2009) found that the percentage of drop-outs is higher among high-intensity workers compared to full-time students and low-intensity workers. Italian students from upper middle classes are less likely to retire or graduate late than students in lower middle classes.

Regarding the second line of research, several studies have considered the effects of students' personal characteristics, the role of internal and external motivation, student

attitude to academic study and any related employment or professional goals (Mega *et al.*, 2014; Richardson *et al.*, 2012).

Belloc *et al.* (2010) used university administrative data to provide information on student performance. The authors do not consider the drop-out phenomenon as a binary choice set (yes or no) but offer realistic treatment of withdrawal decisions analysing several outcomes: drop-out of university, retention in the same faculty, change of faculty, change of institution. This method enables to obtain more detailed information on the type of drop-out/withdrawal and on the motivations relating to it.

Furthermore, students with lower grades and incomes of up to €10,000 per year are less likely to drop-out. This can be explained by the family and financial pressures placed upon this group to conclude their studies as soon as possible. Adult students also have a lower likelihood of drop-out. This could be explained by the fact that adults, and potentially workers, are more motivated to conclude their training path in time.

In respect to the ongoing debate on student performance in higher education, two issues are highlighted as worthy of further exploration: the difference in performance between students who reside on campus and those who commute to campus, and the role played by the institutional environment (including teaching and research quality).

With regards to the first issue, comparisons between commuter and residential students have been analysed over the last four decades following the work of Chickering (1974). According to Horn and Berkold (1998) and Snyder and Dillow (2011), the majority of college students commute to campus in USA. However, Jacoby (2000) found that these students were highly likely to be less involved in academic pursuits than residential students due to multiple time constraints. This could be problematic because academic engagement, e.g. interacting with academic staff and other students, has been shown to add value to the student experience (Chickering, 1974; Kuh *et al.*, 2011; Newbold *et al.*, 2011). However, Alfano and Eduljee (2007) who performed a survey analysis to investigate the relationship between the number of hours worked and GPA among residential and commuter students, found no statistically significant relationship. This broader comparative literature presents a plethora of research contributions involving samples of differing sizes weighted more towards students residing on campus (Dugan *et al.*, 2008; Weissberg *et al.*, 2003).

Understanding the difference in performance between commuter and residential students is a significant step towards identifying student groups most at risk of delayed graduation. In Italy, the aspiration of the higher education system is to increase the number of students with a degree, in line with other European countries. Within this context, it is important to study the progression of residential and commuter students to help identify and support the student group most at risk.

With regards to the issue of institutional environment, research and teaching quality have already been explored in previous studies.

If the positive effects of teaching quality are well known in literature, the analysis of teachers' research performance on students' careers has not received the same attention. As pointed out by several scholars, research drives good teaching. Current research has focussed on how the relationship between research and teaching could or should work (Malcolm, 2014; Jung and Kim, 2017).

Raponi *et al.* (2016) analysed university performance with a multifactorial approach, adopting a multivariate technique (biclustering) to compare private and public universities in Italy. They have focussed on different dimensions such as productivity, teaching, research and internationalisation, comparing 55 Italian Economics faculties and identifying differences between public and private universities. The study showed that private institutions present better performances compared to public universities, especially in terms of productivity and internationalisation. In addition, private professionals are very active on fund-raising and are more careful about providing human and structural services to students.

Public universities are active in the internationalisation of education (incoming and outgoing students) and in implementing actions aimed at supporting students during their course of study.

Based on these findings, it would make sense to allocate increased resources to research projects rather than teaching programmes. However, the existence of a direct connection between research and teaching activity is not obvious (Gibbs, 1995). For example, in their meta-analysis Hattie and Marsh (1996) conclude that there is not a strong relationship between research and teaching performance.

Furthermore, the teaching and research dimensions are not easy to analyse as they are influenced by a number of external variables such as personal motivation and interests, time commitments and orientations to teaching (Robertson and Bond, 2001). A review of the literature has demonstrated two opposing positions. The first is that the relationship between teachers' research productivity and teaching efficacy is very low (Noser *et al.*, 1996; Coate *et al.*, 2001; Pocklington and Tupper, 2002). The second is that research carried out by teachers has a positive impact on students' learning (Scott, 2002; Healey and Roberts, 2004). Healey (2005), in particular, showed that there are positive benefits for undergraduate students' learning when their teachers are actively involved in research.

The incentives offered to those focusing on either teaching or research in Italy could contribute to a shift in the equilibrium. Young (2006) found that academic teachers perceived teaching as a highly demanding career with a low return in terms of salary and social status in comparison to research and other institutional activities. This aspect has been recognised to drive academics to give much more emphasis to their research as it repays more than teaching activities (Taylor *et al.*, 2007). These aspects can lead to a situation in which an institution "specialises" in only one dimension. Analysing the impact of the two activities is a fundamental step in adopting the most appropriate approach both at institutional and national level. A number of authors have stressed the role played by the model organisation and college mission on students' results and well-being (Thiele *et al.*, 2016; Choi and Rhee, 2014).

3. Paper aims and literature contribution

This paper contributes to the debate about the impact of institutional quality on the performance of residential and commuter students, aiming to address the question of balance between teaching and research orientation.

In contrast to previous important research that utilised national data banks (Cingano and Cipollone, 2007; Triventi and Trivellato, 2009), this study includes individual characteristics – collected from the administrative offices of universities – which may be potentially relevant to understand drop-out probability.

Furthermore, the paper tries to address another relevant issue that is common to many universities and other higher education institutions: the difference in performance between residential and commuter students.

The research goal is to elucidate two issues that, as far as the authors know, have not been fully explored yet. First, it focuses on the impact of departments' features on students' performance. Although it has been demonstrated that teaching quality performance reduces students' propensity to drop-out (Kemran, 2016; Johnes and McNabb, 2004; Hanushek and Rivkin, 2006), the understanding of the effects of research quality and productivity on students' performance appears to be limited. This analysis aims to fit into the current debate by testing the impact of research quality – measured by national indicators provided by the Italian Ministry of Education, University and Research (MIUR) – and teaching quality – proxied by students' satisfaction – on students' careers. Second, the research compares the performance of two groups of students: residential and commuter students (Jacoby, 2000). This research

question is important because the two groups present very different needs and behaviours. For instance, one can think how their status affects the demand of services both in terms of quantity and typology (student accommodation, transports, public areas, etc.) (Bowles and Brindle, 2017).

Studies on microdata by Belloc *et al.* (2011) and Buralassi *et al.* (2016) analyse cohorts of students from the same Italian university; however, unlike the present study, which involves all the subject areas present, they focus on singular specific departments (economics in the first case and education sciences in the second case).

In considering the impact of two relevant variables in the explanation of drop-out – teaching and research quality – neither of these studies focus on comparing the performance between residential and commuter studies as the present study does. In addition, both studies analyse data from the same large University in Rome: “Sapienza”. In the present case, a medium-size and insular University, the University of Sassari (see Context analysis section) has been considered. Raponi *et al.* (2016) analyse the data of 55 Italian universities but they have only included data from economics faculties in their sample. Moreover, they have not focussed on the comparison between residential and commuter students. Finally, they adopted different indicators to analyse the variables of teaching and research. For example, they have not considered student satisfaction and the National Agency for the Evaluation of the University System and Research (ANVUR) index.

To close this gap, information about students registered in the Autumn 2008 cohort at the University of Sassari was scrutinised in the present research. The implementation of a longitudinal analysis solves any problems of data comparability over time. In fact, all students faced the same environment at the same time, which helped to model and interpret the variables under study. First, the University of Sassari is a good Italian case study as it is representative of the national situation (60 per cent delayed graduation) (Zotti, 2015). Second, in the Italian context the University of Sassari is a medium-sized institution (12,000 students in 2014/2015) and a medium-ranked university. Therefore, results could be generalised to similar institutions within the Italian system.

Third, the isolated condition of Sardinia dramatically reduces the outflow/inflow of students. This aspect leads to a high homogeneity among the student population. Although at first glance this seems to constitute a problem, it is advantageous for the research. The limited presence of ethnic and cultural diversity makes the pattern clearer. There are no interaction issues between our variables of interest through belonging to minority groups, avoiding possible sample and estimator biases. It is observed that residential students perform worse than commuter students – defined as all students who do not live in institution-owned housing on campus. Furthermore, other factors seem to explain the success in attending an academic institution, measured here as the probability to finish the undergraduate programme within the nominal duration. These include individual characteristics (e.g. gender and age), students’ background (family income, secondary schools and final marks obtained), institutions’ environment (departments’ teaching and research quality) and student well-being (student satisfaction). Finally, some policy implications are discussed.

Dealing with residential and commuter students one can notice that the analyses are mostly based on aggregated unbalanced data in which residential institutions are often over-represented (Gianoutsos, 2011). In order to better compare the two statuses across the student population, it is necessary to analyse micro-data and use a balanced sample. The data in this study satisfy both these requirements. The sample contains micro-information of a sufficiently balanced number of commuter and residential students, 341 and 826, respectively. This allows to correctly identify and measure the impact of this status on student performance. As it will be discussed later, some policy implications could be derived from this study.

4. Background information and data

4.1 *The Italian university reform*

The current regulatory framework for the tertiary education system in Italy is the product of various reforms introduced after the post-war period and aimed at extending access to university education until the 1980s. Since 1999, the Italian academic system has been completely reformed to achieve the objectives of the Bologna Declaration. The old systems envisaged four/five-year degree programmes. The new one, introduced with the reform enacted by the MIUR decree No. 509 of 1999 (which came into effect in 2001) and completed by MIUR decree No. 270 of 2004, provides two main cycles. The first cycle, *Laurea* degree, is a three-year full-time programme with a workload of 180 ECTS credits, corresponding to the bachelor degree of the Bologna Declaration. The second cycle consists of a further two-year full-time programme to obtain 120 ECTS credits and to achieve *Laurea magistrale*, corresponding to the master-level degree of the Bologna Declaration. This cycle of education is supposed to prepare students for higher, managerial and professional positions (EC, 2010).

According to Ghignoni (2017), the reform aimed to increase the number of graduate students, particularly by encouraging demotivated students to obtain at least a first-level degree, and to reduce the number of years required to complete a degree. Through analysis of the academic careers of students during the pre-reform (1995 and 1998) and post-reform (2001) periods, Di Pietro and Cutillo (2008) evinced that the reform has contributed to changing students behaviour, reducing their probability to drop-out.

Ghignoni (2017) used a bivariate probit model and sample decomposition techniques to analyse determinants of the reduction in the drop-out rate in the Italian university system during the economic crisis. He discovered that the current drop in enrolment in Italian universities is mainly due to a differentiation in the behaviour of the middle class and the bourgeoisie. The cultural background of families maintains its influence on enrolment, but loses ground in preventing abandonment.

During the economic crisis, the drop-out probability of students coming from the middle classes has increased, which can be explained by the financial difficulties faced by middle-class families. A relevant explanation for the recent reduction in drop-out rate can be found in students' background and personal characteristics. If the economic situation does not improve, this could increase inequality and intergenerational social mobility (Ghignoni, 2017). In practice, the reform has attracted more students with less academic skills who are less academically oriented and therefore has not substantially changed the rate of aggregate abandonment (Ghignoni, 2017).

Gitto *et al.* (2016) highlight the importance of analysing not only student careers but also academic institutions. For example, universities located in Northern Italy present lower drop-out rates and drop-out rates appear to be higher in public universities than in private ones. Moreover, if it is true that student background is strongly connected to the propensity to drop-out, other structural factors are important – for example, the high number of universities with remote campuses and the number of courses taught at those branches.

The organisational aspects of the universities and service – for example, the number of teachers per student – also influence the probability of drop-out (Gitto *et al.*, 2016).

4.2 *Context analysis*

The University of Sassari is an Italian medium-sized state university of over 12,000 students and with a 455-year tradition. It is located in the north west of Sardinia, in a city of around 130,000 inhabitants. Research, discovery and promotion of knowledge are core activities of the university, which offers a wide range of undergraduate and graduate programmes.

In this paper, a panel of undergraduate full-time students that enrolled at the University of Sassari (Sardinia) in September 2008 is analysed. The study has been restricted to this

group in order to observe the entire cycle of their academic career, which nominally should be completed in three years. The period under study is after the educational reform (2006), which means that the new guidelines have already been introduced.

Before the reform, not all departments at the University of Sassari had transformed and activated degree courses in line with the Bologna Declaration.

It is worth noting that students enrolled in a single-cycle degree course, i.e. a five to six years programme, have not been included in the analysis as they would not graduate within the period under study. These programmes consist of 300 education credits. We have included only the programmes that consist of 180 education credits in the first cycle.

The study has analysed data from all departments at the University of Sassari: Agriculture; Architecture, Design and City Planning; Chemistry and Pharmacy; Law; Biomedical Sciences; Economic and Business Sciences; Medical, Surgical, Experimental Sciences; Humanistic and Social Sciences and History, Human Sciences, Education. Therefore, it has a representative sample of most of the student population there. As previously mentioned, the Department of Medicine has not been entirely included as degrees in Medicine and Dentistry take six years; however, other health and care degrees within the Department (nursing and paramedic degrees) have been considered. Equally, the department of Veterinary Medicine has not been included due to the six-year duration of its degrees. Finally, bachelor degrees provided by the Department of Law have been considered except the degree in Law, which takes five years.

4.3 Research design

Participants. The data contain information on the individual and family background of each student, which is collected upon enrolment. The sample age ranges from 18 to 69 years – although, interestingly, more than 50 per cent of the students are younger than 20 – and the gender breakdown is 30.3 per cent males and 69.7 per cent females.

Methods. The study analysed data collected by the Bureau of Research at the University, including:

Student sociodemographic data: (age, gender, family background and student education background) and, in particular, residential and commuter statuses.

Student satisfaction: Since 2001, the Bureau of Research of the University has collected evaluations from students about their satisfaction. Anonymous self-administered questionnaires are collected in class towards the end of each semester. Completion is optional and over 20,000 questionnaires are analysed each year. The evaluation is based on a 1–5 scale where 1 (one) represents the lowest value for the item and 5 (five) represents the highest. The questionnaire is mainly composed of three areas: organisational aspects of the course, teaching and study activities, infrastructure and overall assessment (Table I).

A wide body of literature supports student evaluation as a useful instrument to measure the quality and effectiveness of teaching in higher education (Kemran, 2016; Marsh, 2007; Abrami *et al.*, 2007; Theall and Feldman, 2007). Although most universities collect vast amounts of student feedback using a wide range of evaluation tools (Tucker, 2014), globally there is a lack of published research on the quality of student feedback and on what students say (Hirschberg *et al.*, 2011; Tucker, 2014). However, there is agreement that student comments provide valuable insights into their experience and the quality of teaching (Lewis, 2001; Richardson, 2005; Hodges and Stanton, 2007; Alhija and Fresko, 2009). Despite the fact that student feedback can be useful in informing and enhancing teaching performance, Richardson (2005) highlights that, for a number of reasons, many institutions and teachers do not use student feedback to implement useful changes. The use of student feedback as an instrument to measure teaching quality was justified by Belyukova and Fox (2002) who argued that student success, retention and development are closely linked to student satisfaction.

Area	Item	Indicator
(1) Organisational aspects of the course	(a) "The schedule of lectures, practice and any other teaching activities has been respected"	Organisation: represents how a given department is able to organise teaching and supporting activities
	(b) "The workload required for this course is appropriate in relation to the number of credits allocated to it"	Study_load: measures the relationship between the efforts required to pass the exam successfully and the number of credits associated with the course
(2) Teaching and study activities	"The teacher and the teaching assistants are available to answer any questions, address any issues, and provide teaching support"	Teacher_availability: represents a proxy of teachers and TAs efforts in supporting and helping students
(3) Infrastructure	"The infrastructures (classrooms, libraries, public areas, meeting rooms etc.) are adequate"	Infrastructure: indicates the quality of the infrastructure provided by the department
(4) Overall assessment	"On the whole I am satisfied about the way the course has been carried out"	Satisfaction: represents the overall students' satisfaction about services, infrastructures and teaching quality/availability provided by the department

Table I.
Questionnaire design

Department research quality: Finally, the research quality of the departments under study is taken into account. The study employs a composite index calculated by the National Agency for the Evaluation of the University System and Research (ANVUR) in Italy. The index measures the "distance" between the research productivity of a given department and the median productivity in the same field at national level.

5. Empirical approach

The variable of interest of this study is "being" or "not being" a student that takes more than three years to obtain a degree. It is clearly a binary response variable since it can be defined by 1, if there is delayed graduation or by 0, otherwise.

Given the characteristics of this variable, the present study proposes a probit model, as it is appropriate for binary variables and it allows to model the probability to finish the university programme in the nominal duration according to a set of explanatory variables that can be divided into three groups. In Probit model the goodness of fit, namely, the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC) and the percentage of correct prediction (PCP), is higher compared to Logit approach[1]. The first group includes the inherent characteristics of the student such as gender (Male = 1 if the student is male; 0 otherwise) and age (Age). Furthermore, five dummy variables represent students' (upper) secondary studies (Other institutes, Technical secondary institute, Professional secondary institute, Teacher training school, Lyceum). The final score of such secondary studies is also included, calculated on a 100 points scale (Diploma_mark). In the second group the variables considered are family and geographical factors such as place of origin (Residential = 1 if he/she comes from a village/city which is placed more than 30 km from the university; 0 otherwise[2]) and family's average income (Income). The third group includes environmental variables that could affect student performance. More precisely, it focuses on those variables that directly relate to the quality features of the departments such as number of teachers per student (Teacher_ps), quality of research (DipQR) and students' opinions about teaching and environmental quality (Study_load; Organization; Teacher_availability; Infr_quality). A positive result is expected for all these variables. Since a positive students' evaluation can be driven by "generous" marks, which in turn can prevent a delayed graduation (Taylor *et al.*, 2007), endogeneity problems may occur. To avoid this, the indicators are analysed using their difference

between 2008/2009 and 2011/2012, which represent the beginning and the end of the period under study, respectively.

Table II shows the descriptive statistics of the variables under study.

6. Results

Students come mainly from high schools (more than 58 per cent) or technical secondary institutes (more than 24 per cent). Furthermore, 70.8 per cent of them are residential students, which means that they come from a place further than 30 km from the university. In other words, this group of students cannot commute and need to find accommodation at the campus or the neighbouring structures. The data set contains other relevant information, such as family income and final mark at secondary school. According to the data, 62.8 per cent of students who enrolled in 2008 completed their degree in more than three years.

Tables III and IV report the marginal coefficients of the probit estimations. According to the first analysis (Table III) the main factors that play a part in reducing the probability to be late in graduation are: final mark at secondary school, quality of departments' research, number of teachers per student and students' overall satisfaction. In particular, an increase of 1 per cent in the final mark leads to a decrease of 0.0058 per cent in the likelihood of not finishing the university programme within the nominal time (Column 1). However, this variable suffers from a well-known endogenous problem. Following the famous example in Wooldridge (2010), the final mark at secondary school and the probability to end the undergraduate programme as soon as possible depend on an unobservable variable, namely, ability. This issue has been taken into account when deciding to only include the growth rate of this variable from one year to the next among the controls set.

It has also been observed that departments features are relevant: the higher the environment quality of the department, the higher the likelihood that students exhibit a good performance. Students in departments with a higher quality research standard have a higher probability of finishing their studies within the nominal duration (DipQR = -0.25). A higher number of teachers per student also helps students to finish their studies in the expected time (Teacher_ps = -0.037). Finally, the overall satisfaction of students affects

Variab	Mean	Median	SD
Irregular_career	0.628	1.00	0.483
Income	32,556.14	17,815.08	94,948.65
Age	21.160	19.00	5.130
Male	0.303	0.00	0.460
Residential	0.708	1.00	0.454
Diploma_mark	78.891	78.00	12.178
Lyceum	0.581	1.00	0.493
Technical_institute	0.243	0.00	0.429
Professional_institute	0.049	0.00	0.236
Teachers_institute	0.091	0.00	0.288
Other_institute	0.036	0.00	0.188
DipQR	-0.074	-0.091	0.286
Teacher_ps	0.430	0.111	1.161
Satisfaction	0.015	0.012	0.024
Organization	0.005	0.014	0.058
Study_load	0.017	0.013	0.050
Teacher_availability	0.002	0.00	0.016
Infrastructure	0.007	-0.011	0.083

Table II.
Descriptive statistics

Note: Observation = 1,167

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Income	-2.6e-07* (1.3e-07)	-2.7e-07* (1.4e-07)	-2.4e-07* (1.4e-07)	-2.5e-07* (1.4e-07)	-5.0e-07* (2.9e-07)
Age	0.00039 (0.0029)	0.0077* (0.0041)	0.00034 (0.0029)	0.0080* (0.0042)	0.00048 (0.0029)
Male	-0.029 (0.033)	0.29*** (0.11)	0.52 (0.053)	0.37*** (0.10)	-0.030 (0.033)
Residential	0.12*** (0.033)	0.13*** (0.033)	0.17*** (0.041)	0.18*** (0.041)	0.11*** (0.036)
Diploma_mark	-0.0058*** (0.0012)	-0.0057*** (0.0012)	-0.0058*** (0.0012)	-0.0057*** (0.0012)	-0.0058*** (0.0012)
DipQR	-0.25*** (0.055)	-0.25*** (0.055)	-0.25*** (0.055)	-0.25*** (0.055)	-0.25*** (0.055)
Teacher_ps	-0.037*** (0.012)	-0.036*** (0.012)	-0.037*** (0.012)	-0.036*** (0.012)	-0.037*** (0.012)
Satisfaction	-3.32*** (0.63)	-3.47*** (0.63)	-3.29*** (0.63)	-3.44*** (0.64)	-3.29*** (0.63)
Technical_institute	0.076** (0.035)	0.073** (0.035)	0.077** (0.035)	0.074** (0.035)	0.076** (0.035)
Professional_institute	0.049 (0.063)	0.042 (0.064)	0.048 (0.062)	0.041 (0.063)	0.049 (0.063)
Teachers_institute	0.085* (0.049)	0.086* (0.049)	0.082 (0.050)	0.082* (0.050)	0.083* (0.050)
Other_institute	0.18*** (0.064)	0.17*** (0.065)	0.18*** (0.064)	0.18*** (0.066)	0.18*** (0.064)
Age*male		-0.016*** (0.0062)		-0.017*** (0.0061)	
Male*Residential			-0.13* (0.070)	-0.14*** (0.070)	
Residential*Income		1.167	1.167	1.167	5.0e-07 (4.5e-07)
Observations	1,167	1,167	1,167	1,167	1,167
Loglikelihood	-720.03	-716.45	-718.23	-714.67	-717.92

Notes: Robust standard errors are indicated in parentheses. ***, **, * Significant at 0.10, 0.05 and 0.01 levels, respectively

Table III.
Probit regression
results (dependent
variable:
irregular_career):
marginal coefficients

behaviour to the extent that a higher students' satisfaction is associated with a lower probability to end up studying for longer than the nominal time (Satisfaction = -3.32).

Average income of families has a very small negative effect, but still significant at 0.10 level, on the variable of interest (Income = -2.6e-07). The place where students live shows the opposite effect and allows to confirm that those students who moved to Sassari to attend their chosen programme are more likely to end their studies in more than three years (Residential = 0.12).

Still focusing on Table III, a discussion of the interaction terms enables an analysis of the relationship between some of the variables under study. Looking at Columns 2-4, one can see the interaction effect between the continuous variable age and the male dichotomy. It seems that male students have, on average, a lower rate of success (Male = 0.29), although this effect decreases as their age increases (Age×Male = -0.016). Furthermore, it is observed that male residential students are, on average, more likely to finish their studies in the given time than the female group (Male×Residential = -0.13). Finally, no empirical evidence was found on the interaction between income and residential status. Therefore, the negative performance in terms of career duration among residential students is not due to low-income issues.

As anticipated in Section 2, this study considered the set of the sub-indicators that represent the subjective satisfaction of students in the following areas: Organisation, Teaching and study activities and Infrastructure. Table IV provides the above-mentioned estimates.

All these sub-indicators, except Teacher_availability, do not exhibit any significant effect on students' performance, although all the coefficients have the expected sign. From these results, it appears that the availability of teachers and TAs are relevant in explaining students' careers (Teacher_availability = -5.99).

7. Robustness check

A concern that arises in the analysis of student performance is that some variables could not be exogenous. More precisely, the observed difference in careers between residential and commuter students may be driven by other variables rather than by their residential difference. This empirical issue is called sample selection bias. A convincing argument is given by Table V, which shows the descriptive statistics of all the variables under study for the two groups: commuter and residential students. According to the pairwise *t*-tests (third column), the two groups are different in a number of variables, namely, Income, Age, Male, secondary education (Lyceum, Teachers_institute, Other_institute) and department features (Department Research Quality DRQ, Students Satisfaction, Organization, Teacher_availability). A possible solution to this problem is provided by Propensity Score Matching (PSM) (Rosenbaum and Rubin, 1983). When considering residential

Variables	Model (1)	Model (2)	Model (3)	Model (4)
Organization	-0.00050 (0.29)			
Study_load		-0.12 (0.32)		
Teacher_availability			-5.99*** (0.93)	
Infrastructure				-0.15 (0.18)
Observations	1,167	1,167	1,167	1,167
Loglikelihood	-734.76	-734.53	-714.45	-734.04

Table IV. Probit regression results (dependent variable: irregular_career): marginal coefficients

Notes: Independent variables included: Income, Age, Male, Residential, Diploma_mark, DipQR, Teacher_ps, Satisfaction, Technical_institute, Professional_institute, Teachers_institute, Other_institute. Robust standard errors are indicated in parentheses. *, **, ***Significant at 0.10, 0.05 and 0.01 levels, respectively

Table V.
Sample description

Variables	(N: 341) Mean (Residential = 0)	(N: 826) Mean (Residential = 1)	Pairwise <i>t</i> -test
Irregular_career	0.547	0.661	-3.68***
Income	46,478.27	26,823.87	3.23***
Age	21.884	20.931	2.86***
Male	0.408	0.262	4.99***
Diploma_mark	78.077	79.201	-1.44
Lyceum	0.607	0.550	1.793*
Technical_institute	0.223	0.253	-1.058
Professional_institute	0.063	0.057	0.402
Teachers_institute	0.046	0.109	-3.434***
Other_institute	0.058	0.028	2.403**
DipQR	-0.041	-0.087	2.501**
Teacher_ps	0.409	0.439	-0.398
Satisfaction	0.011	0.016	-3.116***
Organization	0.010	0.003	1.923*
Study_load	0.020	0.016	1.220
Teacher_availability	0.001	0.003	-1.798
Infrastructure	0.001	0.009	-1.564

Notes: Observation = 1,167. *, **, ***Significant at 0.10, 0.05 and 0.01 levels, respectively

differences, the ideal analysis would consider a sample of observations, which are identical except for the observed characteristics. The difference in the outcomes of the “treated” sample and the “control” sample can then be correctly attributed to the variable under study.

The PSM technique is applied to obtain unbiased estimates of the residential effects on the students’ careers. The matching technique is to select a control group of commuter students that are similar to the treated ones, i.e. residential students. In the first stage a probit regression is estimated on the data set using measurable variables of the characteristics of the students to predict the likelihood of being in the treated group. The estimated parameters are used to calculate the fitted probabilities of being a male. These fitted values are known as the propensity scores.

To do this, the *teffects psmatch* command (STATA13) has been employed. The estimated coefficient associated with the residential feature equals to 0.111 (SD=0.039 and p -value = 0.004). As is evident from the results above, although the Residential coefficient is smaller than that obtained in the previous standard estimations, it is still statistical significant and its sign is consistent. These results are confirmed by graphical representation of the degree of overlap, which clearly show that problems of overlap do not appear in this data set[3].

Another way to deal with a sample selection bias is proposed by Blinder (1973) and Oaxaca (1973). The so-called Blinder–Oaxaca decomposition is a methodology used to study wages differences between groups (sex, race, etc.). This approach divides the observed output differential between the groups into two parts: the first one is “explained” by group differences in individual characteristics (e.g. education or age), while the second one represents the “unexplained” component, which accounts for both a measure for discrimination and the group differences in unobserved predictors (Table V).

The *oaxaca* command is performed in STATA13. Table VI shows the results of the Blinder–Oaxaca decomposition. The mean share of delayed graduation is 0.547 for commuter students and 0.661 for residential students, yielding a statistically significant gap of -0.116. This gap is divided into two components. The first part represents the mean increase in residential students’ performance if they had the same characteristics as commuter ones, namely, Income, Age, Male, Lyceum, Teachers_institute, Other_institute,

DipQR, Satisfaction, Organization, Teacher_availability. However, such differences account for only a 0.0024 increase in students' performance. In fact, such a small number is not statistically significantly different from 0. So, the differences in endowments account for an insignificant part of the performance differential while a gap of -0.118 remains unexplained. This analysis confirms what we have found with the PSM technique: the difference in performance between the two groups remains even after controlling for potential selection bias.

8. Discussion

The present analysis documents the main factors in explaining the performance of undergraduate students, using the University of Sassari as a case study.

It emerges that students' satisfaction, both in terms of teaching and environmental features, has a positive influence on their performance (Marsh, 2007; Abrami *et al.*, 2007; Theall and Feldman, 2007). This result is in line with the empirical literature (see amongst others, Kernan and Lord, 1991; Hartman and Schmidt, 1995; Machado *et al.*, 2011) that highlights the importance of student satisfaction in improving the efficacy of their performance at university and their future employability. As Taylor *et al.* (2007) and Waggoner and Goldman (2005) discussed, a winning strategy to improve student satisfaction and reputation is to encourage higher levels of success and graduation rates.

Student satisfaction assessment should also explore issues related to the status of residential and commuter students while, at the same time, collecting their suggestions to involve them more actively.

The paper also gives some indication as to the individual and background factors that support the students' performance. These relevant factors were highlighted by Gitto *et al.* (2016) and the previous literature on the topic cited in the framework of the paper.

Another important factor that needs to be considered is the distance between students' homes and universities (e.g., Gitto *et al.*, 2016; Cingano and Cipollone, 2007; D'Hombres, 2007).

We find that residential students are more at risk of underperformance than their commuter peers.

According to Gitto *et al.* (2016), residential students are more likely to enrol at University without taking into consideration self-motivation and commitment, and personal academic skills, probably in relation to the low expenses that they anticipate having to bear, compared to their commuter peers.

It is important to consider that universities fees do not represent an obstacle for residential students; in fact, tuition fees in Italy are generally lower than in other countries in Europe. Average tuition fees for a higher public education in Italy are between €0–€1.500 per year. Academic fees are linked to student's family income and academic performance (Agasisti and Murtinu, 2016).

	Coef.	Rob. SE	z
<i>Differential</i>			
Prediction I (Residential = 0)	0.547	0.027	20.25***
Prediction II (Residential = 1)	0.661	0.016	40.22***
Difference	-0.116	0.031	-3.64***
<i>Decomposition</i>			
Explained	0.002	0.010	0.23
Unexplained	-0.118	0.031	-3.73***

Notes: Observation = 1,167. ***Significant at 0.01 level

Table VI.
The blinder–Oaxaca
decomposition

On the other hand, commuter students could be more conscious of the implication of being enrolled to the university, for example, in relation to expenses and family pressures to complete their degrees.

Future research studies should further investigate student's attitudes for these two types of students with the purpose of providing services focussed on the different learning and vocational requirements.

There is no strong evidence of differences between commuter and residential students, particularly in European universities. In addition, there is a small amount of research focusing on the differences between the academic performance of commuter and residential students, some of which contradicts the results of the present study.

In fact, several studies highlight (Jacoby, 2000; Newbold *et al.*, 2011) the advantages and benefits for residential students. For example, they have easier access to university services and facilities, they are more involved with student community building and they can receive more support from the student network. Moreover, they do not spend time and effort travelling from their residence to university.

Other research studies, such as Gianoutsos and Rosser (2014), show that there are practically no differences in terms of academic performance among commuter and residential students. However, it should be considered that most of these studies are focussed on the American University System, which is vastly different from the European system, and even more so in comparison to the Italian system. The culture of student campus life typical of American universities is absent in Europe.

This should be translated into a higher effort by the institution to rectify this gap. This research highlights the need to calibrate the teaching provision in response to the various typologies of students, e.g. residential and commuter students, full-time and part-time students, students with and without disabilities. It is important to support all groups according to their needs, in order to facilitate and increase the sense of community among students, which will help them to improve their productivity and well-being (Bowles and Brindle, 2017).

This study emphasises the role played by Departments' research quality: the empirical evidence shows that high research productivity is positively correlated with the likelihood for students to finish in time. Moreover, the number of professors per students, taken here as a proxy of teaching supports, has a positive effect on the ability of students to finish their graduate studies within the given period. High teaching standard is positively correlated with student performance, as in Belyukova and Fox (2002). A direct policy implication of these findings is that supporting academic staff and potentiating their performance in both research and teaching has a positive effect on student performance. It would also be desirable to involve students in research projects in order to stimulate their active learning and skills development (Healey, 2005).

Finally, the higher productivity of commuter students compared to residential ones could be due to a sample selection bias. In other words, good students might prefer to complete their studies in institutions outside of Sardinia. This effect could be stronger among the incoming students since their opportunity cost is higher than it is for students from Sassari. This result is quite surprising since both the theory and the previous experimental investigations and surveys show a different relationship. A straightforward policy implication seems to be that the University of Sassari should promote new services in order to balance the situation between residential and commuter students and filling up such a gap.

Services should be made available and promoted to students by trying to finalise some specifics for commuter students to engage in university community building. Furthermore, it is important to annually monitor students' performance and satisfaction linked to a specific university service. This would enable a greater understanding as to

which services are useful to prevent student drop-out (Bennet, 2003). At the same time, the implementation of activities supporting the professional identity of students during their degree could be recommended. Such activities would mitigate demotivation and student inactivity (Sweitzer, 2009).

A possible rationale for this controversial outcome is the fact that the quality level of services provided by the University of Sassari is not sufficient to give the same opportunity to the two groups. Students who move to live on the campus or nearby might have high costs in terms of adaptation to their new environment. This may have had some influence on their productivity. In this sense, it is important to increase funding in order to support student performance (Jacoby, 2000). Another reason could be the presence of a sample bias. Students with better results at school prefer to complete their studies outside of Sardinia. This is even more true for students coming from outside of Sassari, since the difference between the expenditures associated with the two options, i.e. stay in Sardinia or move to another university in the North of Italy or abroad, is lower.

Students' ability to complete the degree programme within the nominal duration is an important issue in Italy since it is used by MIUR as a proxy of teaching performance. Therefore, students' behaviours impact on university system transfers. In this framework, the findings of this study can be a tool for university policies aimed at helping and supporting students during their careers. These findings will enable the promotion and elaboration of new strategies that satisfy student expectations and encourage a supportive and collaborative relationship between teachers, administration and students (OECD, 2002; Bussu *et al.*, 2018). However, this analysis should be replicated in other Italian universities in order to depict a clearer picture of the whole Italian system.

In alignment with Buralassi *et al.* (2016), it is the authors' belief that Italian universities should strengthen services and facilities to support the degree choices of students and should consolidate their collaboration with high schools. In addition, universities should promote ongoing guidance activities to support student self-management and self-determination (Lizzio and Wilson, 2005), and should implement new projects and training to develop student life skills, such as decision making and problem solving, aimed at increasing confidence in the management of daily life problems. Finally, it may be useful to rethink services and projects based on students' statuses (residential vs commuter or full-time vs part-time) and training needs.

9. Conclusions and implications

This paper contributes to the international ongoing discussion on the development and implementation of teaching methods to support student performance. Notably, both students and university will benefit from these practices. Determining the main factors of student careers (in terms of duration, performance or drop-out) can help to identify new strategies and to design appropriate actions that support the student community. For all these reasons, this paper is not only of interest for the academic community, but it could also be useful for policy makers to identify strategies and incentives to improve student well-being and performance.

In view of the results emerged, it is the authors' belief that future research should be focussed on student's attitudes and study propensities, particularly for two types of groups: residential and commuter students. Moreover, secondary education and higher education institutions should consider motivational and psychological support services focussed on personal needs of different types of students.

Furthermore, in consideration of the direct relationship between research quality and performance students (i.e. to complete their degree in time), it is deemed crucial that lecturers have adequate time to implement research quality that they can transmit to their students. Lecturers over first year students enrolled is inversely and significantly correlated to

dropouts (Gitto *et al.*, 2016). For this reason, national government should increase permanent staff academic recruitment.

In conclusion, this research could be extended in order to analyse the moment in time where it is more frequent for students to fail in their university careers. For instance, Dekker *et al.* (2014) highlight that a higher drop-out rate is observed during the first year of study. One reason can be that students do not adapt to the new university environment. Alternatively, it could be a simple problem of matching between students and institutions: working with a limited set of information, students have a higher likelihood to commit a mistake during their first year than in subsequent years. Thus, in future analysis it could be very useful to analyse this issue in order to devise some strategies for motivating and involving students in the university context (Leveson *et al.*, 2013).

Notes

1. Probit model provides the following values: AIC = 1465.912, BIC = 1531.721 and PCP = 0.661. Logit model shows the following ones: AIC = 1466.433, BIC = 1532.241 and PCP = 0.659.
2. The distance threshold has been set at 30 kilometres since it is the average radius of Sassari's commuter belt (*Rete metropolitana di Sassari*). Different thresholds are also tested but the main results still hold.
3. The graphics are available upon request.

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The magnificent “I” in business education: evidence from Greece

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Abstract

Purpose – The purpose of this paper is twofold: first, to examine the level of narcissism and its individual traits in students who study business, in the particular context of a regional country such as Greece; and, second, to test how several demographic variables are related to narcissism levels.

Design/methodology/approach – The study consists of a theoretical part on narcissism in business education and an empirical part that was based on a survey conducted with the use of a questionnaire. The analysis includes hypothesis testing and basic statistical tests.

Findings – Findings suggest that sex, study levels, years of business experience and (personal/family) income do impact specific narcissistic dimensions, which may be a cause for concern both for employers and higher education providers.

Research limitations/implications – The study was conducted in a regional country, the participants were students of public higher education institutions only and the questionnaire was self-reported, which could lead to likely social desirability effects.

Practical implications – The investigation of narcissism in the Greek business education might be of interest to business education providers (for providing curriculum that help future managers/leaders to deploy the positive characteristics of narcissism and avoid or not to develop the negative ones) and to future employers to apply more effective human resource practices, i.e. selection, training, rewarding.

Originality/value – The study at hand aimed to investigate the presence of narcissism and its individual (narcissistic) behavioral dimensions in students studying business in Greece.

Keywords Greece, Business education, Narcissism, Personality characteristics

Paper type Research paper

1. Introduction

Narcissism is theorized as a set of characteristics and behaviors of an individual that reveals various degrees of: passion and obsession with itself; interest or aloofness for understanding others' feelings; and egocentric and relentless pursuit of personal gratification, domination and ambition through the admiration of its own personal capabilities (Kets de Vries, 2014; Campbell and Miller, 2011; Morf and Rhodewalt, 2001; Maccoby, 2000).

As a concept, narcissism is present in social personality (Foster and Campbell, 2007) and psychiatric literature (e.g. Campbell *et al.*, 2011). By being one of the three dark sides of personality along with Machiavellianism and psychopathy (Paulhus and Williams, 2002), it is usually unveiled by an individual's extremely positive view of itself (ego), a peculiar self-regulation pattern, namely, a trend to maintain this positive view of itself at any cost and a tendency to form shallow relationships with other people (Brunell *et al.*, 2008). According to the various degrees of narcissism present in every individual, there are two main categories: healthy/productive narcissism which reflects the basic human need for love and admiration and is related to age and maturity level of individuals, who are presented as self-confident, having empathy and a sense of what they can truly accomplish, while they may be willing to take risks and combine their passion and energy to create/innovate; and unhealthy narcissism



that reflects a strong lack of empathy, a distorted view of personal abilities, it entails manipulating and exploiting people while aggressive and antisocial behavior may be displayed (Harrison and Clough, 2006; Maccoby, 2000; Kernberg, 1975; Kohut, 1972; Freud, 1914).

Narcissism is linked to several positive characteristics and outcomes, such as self-esteem and positive affect, extraversion and satisfaction from life (Sedikides and Campbell, 2017; Sedikides *et al.*, 2004; Campbell *et al.*, 2002). Narcissism is also related to charisma and vision (Rosenthal and Pittinsky, 2006), to an increased tendency for leadership (Anninos, 2018; Resick *et al.*, 2009) and to high performance in short-term creativity contexts, such as classroom context (Westerman *et al.*, 2016; Goncalo *et al.*, 2010). Nevertheless, narcissistic personalities can often resort to negative behaviors such as violence, aggression, white collar crime (Martinez *et al.*, 2008; Lakey *et al.*, 2008; Blickle *et al.*, 2006; Luhtanen and Crocker, 2005; Campbell *et al.*, 2005) and morally questionable behavioral patterns, such as the use of resources to achieve personal goals and the pursuit of risky strategies (Campbell *et al.*, 2004).

In addition, there are converging findings documenting the impact of narcissism on various organizational parameters such as leadership (Kets de Vries, 2014; Resick *et al.*, 2009; Brunell *et al.*, 2008; Rosenthal and Pittinsky, 2006), task performance (Wallace and Baumeister, 2002), management practices and decision making (Foster and Trimm, 2008; Chatterjee and Hambrick, 2006). The behavior of narcissistic individuals holding leadership positions in organizations impacts those organizational parameters which are pre-conditions for organizational excellence such as people, values and self-improvement (Anninos, 2018). It is therefore clear how this is a matter of concern not only for potential employers but also for business schools, which need to have relevant strategies and policies in place to diagnose narcissism of faculty and students, understand its causes and/or manage relevant behavioral cases.

2. Narcissism in business schools

Even though the significance of intangible elements (e.g. vision, values, service) in modern times is increasing, it is believed that young individuals tend to be more passionate about themselves and rather more materialistic than older people (Stein, 2013; Westerman *et al.*, 2012; Bergman *et al.*, 2010; Twenge *et al.*, 2008a), and this is something that can be ascribed to both the way of their upbringing and education and the changes happening in the social and cultural context (Lieberman, 2004; Nelson, 1977). A recent study by Wetzel *et al.* (2017), however, which was conducted in the USA, presents contrasting evidence and supports that narcissism has not been increased among college students. Hence, it is imperative to point out that more evidence and studies are needed (in different cultures and contexts) and control for more variables to verify or not the increase of narcissism in young generations (Roberts *et al.*, 2010). The so called “Me Me Me” generation appears as rather obsessive with glory and social acceptance, lack of empathy and exaggerating demands which are based on their belief that they deserve them (sense of entitlement). This trend is particularly obvious among business education students (Robak *et al.*, 2007). They have higher expectations for success (Campbell *et al.*, 2006), and some narcissism-related traits like materialistic orientation and overconfidence appear to have been increased in relation to the past (Pew Research Center, 2007; Morf and Rhodewalt, 2001). It is common for professors to have students who believe that they are entitled to everything; from personal attention and guidance to complaining and negotiating grades if they are different to what they expected (Turnipseed and Cohen, 2015). In some cases, students possessing high entitlement resort to threats and psychological pressures in order to get exactly what they want (Twenge and Campbell, 2009). Instead of focusing on improving themselves, this perception of their perfect “self” lead them to put the blame on the professor and his/her methods of teaching and/or evaluating.

In literature, there are several studies that investigate narcissism in business education. Most of these studies have been conducted in the US and use the Narcissistic Personality

Inventory (NPI) to unveil the degree of narcissism among students. To the best of our knowledge, Carroll (1987) was the first that examined narcissism of MBA students, in order to identify the characteristics of the narcissistic individuals related to motives for affiliation, intimacy and power. Her findings suggest that there are differences between males and females regarding narcissism and that narcissism is positively correlated with the need for power and negatively with the need for intimacy (Carroll, 1987).

Twenge *et al.* (2008a) observed increased narcissism levels in 85 samples of American college students between 1980 and 2006 by using a cross-temporal meta-analysis. This means that narcissism scores (based on the NPI) are significantly correlated with the year of data collection (weighted by sample size). Among the results of their study is the rise of individualistic traits like assertiveness, agency, self-esteem and extraversion. In the same year, Trzesniewski *et al.* (2008) presented contradictory evidence in relation to the study of Twenge *et al.* (2008a) and reported that narcissism is not significantly changed among students, based on data between 1982 and 2007 at campuses of the University of California. In another study, Twenge *et al.* (2008b) corroborated the above findings of Trzesniewski *et al.* (2008), which can be justified by cultural and ethnic shifts that took place at the University of California.

Three more studies on narcissism and more specifically on the relationship between narcissism and leadership were undertaken by Brunell *et al.* (2008). The first two involved psychology college students and the third managers in an executive MBA program. In the first two studies, it was found that narcissism is a predictor of leader emergence and that it was positively correlated with the desire to lead and self-ratings on leadership. However, in the third study, it was shown that students rated highest in narcissism were most likely to be identified as emerging leaders (Brunell *et al.*, 2008).

Brown *et al.* (2010), based on the hypothesis that ethical behavior has its roots on personality characteristics, surveyed business students (by using “selfism” questions) to investigate the role of empathy or narcissism in ethical decision making. They indeed documented that empathetic and narcissistic personality traits significantly predict ethical decision making and suggested that students studying finance exhibited a statistically significant tendency for less empathy and more narcissism compared to other business students. This means that the discipline of finance appears to attract or cultivate students that have those personality characteristics which lead to less ethical decision making.

Traiser and Eighmy (2011) conducted a survey in undergraduate students studying in public and private universities and found that private university students had higher narcissism scores in comparison with students from public institutions. They moreover found a positive relationship between narcissism and family income and a negative one between narcissism and age (as individuals grow, expectations dissipate). While it is believed that students who take ethics courses tend to make more ethical decisions, this study concludes that this is something that has no impact on students’ moral reasoning. Also, the connection of narcissism and entitlement becomes apparent in Menon and Sharland’s (2011) study, which found that exploitative attitude is a mediator in the relationship between narcissism, entitlement and academically wrong behavior.

In another relevant study, by using data from undergraduate business and psychology students at Appalachian State University, Westerman *et al.* (2012) compared the level of narcissism between students of these two disciplines and examined if narcissism influences salary and career expectations. Their findings suggest that business students are more narcissists than their psychology colleagues; narcissism does not appear to have any significant relationship with class activities and that narcissistic individuals seem to be more successful in terms of employment, salary and promotions. This finding can be explained by the fact that narcissism is related to undertaking risks and entrepreneurial intentions (Mathieu and St Jean, 2013).

Brown *et al.* (2013) conducted a survey with the aim to examine the level of narcissism as well as potential differences between accounting students at a public and a private institution in the Midwest USA. By using the NPI, they found out that: accounting students have a lower level of narcissism in comparison with other business students and the general population of college students; there are not significant differences between state and private school students, something that contradicts Traiser and Eighmy’s findings; there are differences between men and women regarding vanity (women score higher) and entitlement (men scored higher); and students who hold leadership positions attain higher NPI scores. It is noted that the average NPI score of 15.75 of this study was somewhat higher than the average score for the general US population (15.3), but below the average for MBA students (16.18) and celebrities (17.8) (Foster *et al.*, 2003; Young and Pinsky, 2006). Accounting students appear to be less narcissistic than celebrities, and MBA students on self-sufficiency, exhibitionism, vanity and entitlement have mixed results on authority and exploitativeness and scored higher than both of the other groups on superiority.

Bergman *et al.* (2013) studied the relationship between narcissism, materialism and environmental ethics in undergraduate business students at an AACSB-accredited business school. Their findings reassure the connection of narcissism and materialism and their relationship to low environmental ethics, even though they present an indirect impact of narcissism and students’ environmental ethics.

The relationship of narcissism and academic entitlement was studied by Turnipseed and Cohen (2015). The authors suggest that students’ narcissism (male students score higher on dark personality traits) is indeed related to academic entitlement which is translated to several behavioral patterns such as negotiating grades, exercising psychological pressure on teaching staff and feelings of invincibility (Turnipseed and Cohen, 2015). If students manage to achieve what they want, it is highly likely that these behaviors will be repeated in the future.

Recently, Westerman *et al.* (2016) studied the congruence of faculty and students’ narcissism. According to their findings students that score low on narcissism tend to struggle in classes with narcissistic professors, feeling high difficulty and considering teaching staff to be of lower status. On the contrary, when there is congruence between high narcissism of both students and faculty, students perceive classes less difficult, get high grades and view professor as being of a high status. Hence, student–faculty narcissism fit is a key parameter in any attempt to harness narcissism in educational contexts.

The issue of narcissism in the Greek higher education context and more specifically in business education has been underdeveloped. Gkika and Sahinidis (2013) explored narcissism in undergraduate business students at a large higher education institution in Athens and found that students had higher narcissism levels than their parents. More specifically, male students scored higher on some narcissism traits like self-absorption, self-admiration, leadership/authority and superiority/arrogance while they reassured that aging reduce narcissistic traits.

The above studies are briefly presented in Table I.

3. The Greek context and study rationale

It is widely known that during the last years, Greece has been facing the worst crisis in its modern history; a multilevel and multifaceted crisis that was a direct consequence of the country’s growth model that was adopted primarily after the restoration of democracy in 1974; the lack of a proper business mentality and a clear vision for the future; and the country’s specific cultural and historical developments. A combination of political, social and economic factors had contributed in developing a mentality that was incompatible for sustainable growth that gradually became apparent in many fields of life and corroded significantly the country’s future perspectives. This led to low competitiveness, low foreign direct investments and an inherent inability to create new wealth and thus new employment opportunities.

Table I.
Previous studies of narcissism in business education

Author(s)	Instrument	Sample	Main findings
Carroll (1987)	NPI, Thematic Apperception Test	MBA students (<i>n</i> = 65)	Differences between men and women regarding narcissism. Narcissism has been found to be positively correlated with the need for power and negatively with the need for intimacy
Twenge <i>et al.</i> (2008a)	NPI	85 samples of American college students (1980–2006) (<i>n</i> = 16,475, USA)	Narcissism scores are significantly correlated with year (weighted by sample size) Rise of individualistic traits like assertiveness, agency, self-esteem and extraversion
Trzesniewski <i>et al.</i> (2008)	NPI	College students (<i>n</i> = 26,887, USA) 1982–2007	No evidence that college students' scores on the Narcissistic Personality Inventory increased (Univ California Campuses)
Twenge <i>et al.</i> (2008b)	NPI	7 samples University of California (<i>n</i> = 2,652, USA)	Small changes in specific facets of narcissism Corroborate the above findings of Trzesniewski <i>et al.</i> (2008) which can be justified by cultural and ethnic shifts that took place at the University of California Excluding the California samples, narcissism increased in 1988–2006 across 27 campuses
Brunell <i>et al.</i> (2008)	Studies 1,2: NPI Big Five Inventory Rosenberg Self-Esteem Inventory Study 3: California Psychological Inventory- Narcissism scale Phares and Erskine Selfishness Test	Study 1: introductory psychology Students (<i>n</i> = 432) Study 2: introductory psychology Students (<i>n</i> = 408) Study 3: managers enrolled in an executive MBA (EMBA) program at a large southeastern university (2002–2005) (<i>n</i> = 153) Business students at a large research university (<i>n</i> = 309)	In the first two studies it was found that narcissism is a predictor of leader emergence and that it is positively correlated with the desire to lead and self-ratings on leadership. In the third study it was shown that students rated highest in narcissism were most likely to be identified as emerging leaders
Brown <i>et al.</i> (2010)		Business students at a large research university (<i>n</i> = 309)	Empathy and narcissism are factors that determine if a student makes an ethical decision Students studying finance exhibited a statistically significant tendency for less empathy and more narcissism compared to other business students
Traiser and Eighmy (2011)	Defining Issues Test version 2 (DIT-2) & NPI	Undergraduate business students in North Dakota and Minnesota (<i>n</i> = 269, USA)	Private college students showed higher NPI scores than public college students Males were found to be more narcissistic than females NPI scores increase as family income increases As age increases, NPI scores decrease

(continued)

Author(s)	Instrument	Sample	Main findings
Menon and Sharland (2011)	NPI & Machiavellian Index (Mach 4)	Undergraduate and graduate students (USA)	The number of ethics courses that students take does not impact their moral reasoning or narcissism Correlation of narcissism and academic entitlement Narcissism and academic entitlement are predictors of exploitative attitude The exploitative attitude is acting as a mediator in the relationship between narcissism and academic entitlement, and academic dishonesty
Westerman <i>et al.</i> (2012)	NPI	Undergraduate business and psychology students of an AACSB state university (<i>n</i> = 536, USA)	Current college students have higher narcissistic scores than college students of the past Business students are more narcissists than their psychology colleagues Narcissism does not appear to have any significant relationship with class activities Narcissistic individuals seem to be more successful in terms of employment, salary and promotions
Mathieu and St. Jean (2013)	NPI -16	Online survey; 1,572 students accepted the invitation, and 89% of them were enrolled from Universities across Quebec, Canada	Student entrepreneurs are more narcissistic than other vocational groups. Narcissism is positively correlated with general self-efficacy, locus of control and risk propensity Narcissism plays a significant role in explaining entrepreneurial intentions, even after controlling for self-efficacy, locus of control and risk propensity
Brown <i>et al.</i> (2013)	NPI	College accounting majors (<i>n</i> = 120, USA)	Accounting students have a lower level of narcissism in comparison with other business students and the general population of college students There are not significant differences between state and private school students
Bergman <i>et al.</i> (2013)	NPI Material Values Scale	Business students of an AACSB-accredited business school (<i>n</i> = 405, USA)	There are differences between men and women regarding vanity (women score higher) and entitlement (men scored higher) Students who hold leadership positions attain higher NPI scores Strong connection of narcissism and materialism which was significantly related to lower levels of environmental ethics. This could

(continued)

“T” in business education

Table I.

Author(s)	Instrument	Sample	Main findings
	New Ecological Paradigm Scale		have negative implications for societies Narcissism has an indirect (no direct) effect on students' environmental ethics
Gkika and Sahinidis (2013)	NPI	1,449 business students (TEI Athens, Greece) and their parents	Narcissism related to materialism and materialism to lower environmental ethics Aging reduces traits of narcissism Males score higher than female regarding self-absorption, self-admiration, leadership/authority and superiority/arrogance
Turnipseed and Cohen (2015)	Academic Entitlement Scale Dark Triad concise measure	169 students	Students narcissism level is higher than the one of their parents Especially male students high in narcissism and psychopathy are predisposed to academic entitlement Male students score significantly higher than females on the dark personalities, and on externalized responsibility
Westerman <i>et al.</i> (2016)	NPI	405 undergraduate business students at a AACSB-accredited state university – Southeastern USA	Narcissism congruence was significantly related to a student's final grade in the class Less congruence was associated with lower course grades and this negative association was partially mediated by perceived professor status and perceived class difficulty More narcissistic faculty were associated with detrimental outcomes for less narcissistic students The student–faculty fit on narcissism is a key parameter in reducing narcissism

The onset of the crisis has been followed by soaring numbers in unemployment, salaries and pensions cutbacks, rising income inequality and cost of living (Sotiropoulos, 2014). In 2013, Greece's overall and youth unemployment reached record heights of 27 and 59.5 percent, respectively. It is known that young people in Greece were more adversely hit by the crisis in comparison with other crisis-hit countries. In addition, the impact of structural inefficiencies, such as the weak higher education–labor market cooperation, the high informal employment, the underdeveloped sector of vocational education and the regional and gender disparities can be considered responsible for young people's feelings of marginalization from the economic and social life, their strong eagerness to migrate for study/work in other countries (400,000 young Greeks left the country during the six-year period from 2011 to 2017) and the increase in the percentage of NEET individuals that live with their parents (Kraatz, 2015).

In such a social and economic context, someone might expect low narcissism levels, perhaps lower than those recorded in other countries. So, several questions arise, such as: Do the limitations in satisfying materialistic needs impact narcissism? Are the young peoples' (especially those studying business) ambitions and overconfidence crumbled and what implications does this have for future growth?

Hence, the rationale for this study and based on the analysis of relevant literature was to examine the level of narcissism in business students of a regional country hit by a severe crisis, possible differentiations among the three higher education levels (undergraduate, postgraduate, doctoral) and factors that might account for potential differences in narcissism scores. These parameters have been underdeveloped in relevant literature.

4. Research hypotheses and method

The goal of this research study has been twofold: first, to examine the level of narcissism and its individual traits in students who study business, in the particular context of a regional country such as Greece and second, to test how several demographic variables are related to narcissism levels. The investigation of narcissism in the Greek business education might be of interest to: business education providers (for providing curriculum that help future managers/leaders to deploy the positive characteristics of narcissism and avoid or not to develop the negative ones), and to future employers to apply more effective human resource practices, i.e. selection, training, rewarding.

In order to address the goal of the study at hand, the quantitative methodology was used. Hence, the investigation of the first part of this study's goal (regarding the level of narcissism and its inherent dimensions) was achieved through the calculation of the participants' scores in the NPI questionnaire. The second part of the goal was examined through the development and testing of the following hypotheses:

- H1.* There are no statistically significant differences between men and women studying business for individual narcissism traits or level of narcissism.
- H2.* There are no statistically significant differences between undergraduate, postgraduate and doctoral students of public business schools for individual narcissism traits or level of narcissism.
- H3.* There are no statistically significant differences among students with various levels of business experience regarding individual narcissism traits or level of narcissism.
- H4.* Career objectives do not statistically significant impact the individual narcissism traits or level of narcissism.
- H5.* The level of gross individual income does not statistically significant impact the individual narcissism traits or level of narcissism.

H6. The level of gross family income does not statistically significant impact the individual narcissism traits or level of narcissism.

4.1 Research design and sample

The survey has been conducted electronically. Third- and fourth-year students, full-time and part-time MBA's and doctoral students in business administration, of the two largest business schools in Greece were the sample of this research study. These schools are the top two in Greece, attract students who satisfy the highest requirements, and run undergraduate and postgraduate programs according to international standards.

Since the first use of the term narcissism by Ellis (1898), there have been many attempts to conceptualize and develop a measurement scale for narcissism both as a taxonomy variable and as a distinct construct. Raskin and Terry (1988) presented an overview of these scales. Raskin and Hall (1979) developed the NPI which was further refined to its current form nine years later by Raskin and Terry. Other forms of the same instrument were developed by (Emmons, 1984, 1987; Ames *et al.*, 2006; Svindseth *et al.*, 2009; Gentile *et al.*, 2013).

While there have been many and more recent attempts to devise a measurement scale for narcissism (e.g. Konrath *et al.*, 2014; Glover *et al.*, 2012; Pincus *et al.*, 2009), the NPI is considered as the most frequently operationalization attempt of narcissism for normal populations (Konrath *et al.*, 2014; Del Rosario and White, 2005) and is attaining adequate validity and reliability (Rhodewalt and Morf, 1995; Raskin and Terry, 1988).

Therefore, in order to conduct this study, a two-part questionnaire was designed and used. The first part included the NPI (NPI-40) in English. It consists of 40 paired statements (which are divided into seven dimensions, namely, authority – 8 items, entitlement – 6 items, exhibitionism – 7 items, exploitativeness – 5 items, self-sufficiency – 6 items, superiority – 5 items and vanity – 3 items) and respondents are asked to select the answer that matches their feelings and beliefs. Their responses are then summed (the highest the score, the highest the narcissistic personality).

The Cronbach's coefficient (α) for our sample was 0.81. The relevant values for each specific dimension have been authority (0.65), self-sufficiency (0.48), superiority (0.55), exhibitionism (0.60), vanity (0.68), entitlement (0.42), exploitativeness (0.54). Miller *et al.* (2018) published a meta-analysis of coefficient α scores on the NPI, in which they included Raskin *et al.*'s range of α by individual NPI scale. The unweighted α scores for authority range from 0.53 to 0.90; exhibitionism range from 0.49 to 0.86; superiority range from 0.41 to 0.84; entitlement range from 0.31 to 0.91; exploitativeness range from 0.30 to 0.86; self-sufficiency range from 0.30 to 0.68; and vanity range from 0.50 to 0.90.

The second self-administrated part asked for some personal and demographic data of respondents which helped us testing our research hypotheses.

The questionnaire including a cover letter explaining the purpose and significance of the study was emailed. Participants were assured of confidentiality and anonymity. For those individuals that did not reply promptly, an oral announcement was made in class followed by a reminding e-mail. The survey was carried out between February and July of 2017, in two phases. More specifically, the first pilot phase took place in February and the second (data collection phase) took place from March to July. The pilot testing was conducted in a random sample of 50 (undergraduate and postgraduate) students to examine survey wording (possible vague terms) and reactions (potential feelings of discomfort), comprehensiveness of instructions and time needed for filling out the questionnaire.

From a sample of 350 individuals, 321 completed the questionnaire with accuracy, thus attaining an overall responsiveness rate of 92 percent.

The analysis of data with SPSS (v24) includes basic descriptive statistics as well as normality, parametric and non-parametric initial and *post hoc* statistical tests.

5. Results and discussion

A total of 321 individuals (98.8 percent, $n = 317$ of Greek origin and 1.2 percent, $n = 4$ of Cypriot, Albanian and Bulgarian origin) at the two largest Greek business schools participated in this study. The sex composition was 41.7 percent male ($n = 134$) and 58.3 percent female ($n = 187$). Regarding the level and type of participants' studies, 37.4 percent ($n = 120$) were junior (third year) and senior (fourth year) students, and 23.7 percent ($n = 76$) were full-time MBA students, 31.2 percent were part-time MBA students ($n = 100$) and 7.8 percent ($n = 25$) were doctoral candidates in Business Administration.

Table II provides an overview of means, standard deviations for the NPI and its individual dimensions by sex and level of study. Scores on the NPI scale may range from 0 to 40 with higher scores showing increased narcissism. The overall mean NPI score in our study was 15.63. The minimum and maximum values on each individual narcissistic dimension are presented inside the parentheses (Table II, first line).

According to Table II, male participants seem to score slightly higher than female on the NPI and on every individual narcissistic dimension with the exception for vanity in which female participants score higher. When participants are classified by the level of study, full-time postgraduate students score higher on NPI, authority, self-sufficiency, exhibitionism, exploitativeness, vanity and entitlement than undergraduate, part-time postgraduate and doctoral students. Doctoral students though score higher on superiority possibly due to their increased reference power. The fact that full-time postgraduate students attain higher scores can be explained by the fact that they are in the beginning of their career (they have less years of business experience) and their expectations and ambitions are high.

Since an assessment of the normality of data is a prerequisite for many statistical tests, both Shapiro–Wilks and Kolmogorov–Smirnov (with Lilliefors significant correction) tests were conducted and a visual inspection of histograms, QQ plots and boxplots was made. In those cases where normality was violated, non-parametric statistical tests were run, while parametric tests were conducted when normality of data was present. A brief overview of hypotheses testing results appears in Table III.

Regarding the testing of *H1*, it was shown that NPI as well as individual NPI dimensions scores are not approximately normally distributed across both groups of the independent variable (Sex). Hence, the use of non-parametric statistical methods was decided to identify potential statistically significant differences between groups. After checking the assumptions for Mann–Whitney tests, (1) histograms: the two distributions had a similar pattern, hence the medians can be used to summarize the differences between groups (2) independence of groups and (3) continuous dependent variable, the test was conducted to determine whether there was a difference in the NPI scores between male and female participants. Results from that analysis indicated that there was not a statistically significant difference between sex groups even though mean NPI scores were higher in male than females (Mann–Whitney $U = 11,113.5$; $Z = -1,729$; $p = 0.084$). The presence of higher narcissism levels in men has also been recorded by Carroll (1987) and Traiser and Eighmy (2011).

The same procedure was applied in the case of the seven individual NPI dimensions. There is a statistically significant difference regarding authority (Mann–Whitney $U = 9,668.5$; $Z = -3.53$; $p = 0.000$), self-sufficiency (Mann–Whitney $U = 10,403.5$; $Z = -2.66$; $p = 0.008$) and vanity (Mann–Whitney $U = 9,840.5$; $Z = -3.4$; $p = 0.001$) between male and female. Male students attained higher scores in authority and self-sufficiency, while female students reported higher vanity scores. The effect sizes for this analysis ($d = 0.2$; 0.15; 0.19) were found not to exceed Cohen's (1988) convention for a moderate effect ($d = 0.3$). This finding (regarding vanity of female participants) was also present in Brown *et al.* (2013) study. Male participants also reported higher entitlement scores than female (though not at a statistically significant degree).

Table II.
Descriptives of NPI
and NPI dimensions

	NPI (0-40)	Authority (0-8)	Self-sufficiency (0-6)	Superiority (0-5)	Exhibitionism (0-7)	Exploitativeness (0-5)	Vanity (0-3)	Entitlement (0-6)
<i>Sex</i>								
Male	16.3 (SD = 6.58)	4.66 (SD = 1.82)	1.91 (SD = 1.37)	1.98 (SD = 1.33)	2.49 (SD = 1.72)	1.74 (SD = 1.41)	1.07 (SD = 1.06)	2.4 (SD = 1.39)
Female	15.15 (SD = 6.14)	3.89 (SD = 1.99)	1.51 (SD = 1.3)	1.92 (SD = 1.28)	2.44 (SD = 1.74)	1.73 (SD = 1.37)	1.49 (SD = 1.11)	2.19 (SD = 1.46)
<i>Education level</i>								
UG	15.10 (SD = 5.97)	3.79 (SD = 1.9)	1.44 (SD = 1.1)	1.9 (SD = 1.26)	2.53 (SD = 1.77)	1.82 (SD = 1.26)	1.35 (SD = 1.1)	2.23 (SD = 1.4)
PG (FT)	17.01 (SD = 6.99)	4.67 (SD = 1.94)	1.87 (SD = 1.48)	1.96 (SD = 1.36)	2.54 (SD = 1.87)	1.99 (SD = 1.46)	1.49 (SD = 1.24)	2.49 (SD = 1.53)
PG (PT)	15.26 (SD = 5.97)	4.29 (SD = 1.9)	1.85 (SD = 1.48)	1.95 (SD = 1.34)	2.34 (SD = 1.53)	1.55 (SD = 1.47)	1.15 (SD = 1.02)	2.17 (SD = 1.44)
DOC	15.44 (SD = 7.18)	4.52 (SD = 2.26)	1.56 (SD = 1.29)	2.08 (SD = 1.26)	2.4 (SD = 1.94)	1.32 (SD = 1.25)	1.28 (SD = 1.06)	2.32 (SD = 1.31)

Notes: UG, undergraduate students; PG (FT), postgraduate students – full time; PG (PT), postgraduate students – part time; DOC, doctoral students

	<i>H1</i> (sex)	<i>H2</i> (level of study)	<i>H3</i> (business experience)	<i>H4</i> (career objectives)	<i>H5</i> (individual income)	<i>H6</i> (family income)
NPI	Tenable	Tenable	Tenable	Tenable	Tenable	Non-tenable
Authority	Non-tenable	Non-tenable	Non-tenable	Tenable	Tenable	Non-tenable
Self-sufficiency	Non-tenable	Tenable	Non-tenable	Tenable	Tenable	Tenable
Superiority	Tenable	Tenable	Tenable	Non-tenable	Tenable	Non-tenable
Exhibitionism	Tenable	Tenable	Tenable	Tenable	Tenable	Non-tenable
Exploitativeness	Tenable	Non-tenable	Non-tenable	Tenable	Tenable	Tenable
Vanity	Non-tenable	Tenable	Non-tenable	Tenable	Non-tenable	Tenable
Entitlement	Tenable	Tenable	Tenable	Tenable	Tenable	Non-tenable

Table III.
Hypotheses tests results

Regarding *H2*, there was not a statistically significant difference in NPI scores among the different study levels (ANOVA $F(3, 317) = 1.615$ $p = 0.186$). To check *H2* regarding individual narcissistic traits and after checking for normality, a Kruskal–Wallis *H* test showed that there was a statistically significant difference between students of different study levels regarding:

- (1) Authority: in order to investigate which groups differ significantly, a series of *post hoc* Mann–Whitney *U* tests were performed. Mann–Whitney *U* value was found to be statistically significant $U = 3,305.5$ ($Z = -3.278$), $p = 0.001$, between the undergraduate and full-time postgraduate student groups. Full-time postgraduate students scored higher in authority. This difference, according to Cohen (1988), appears small to moderate ($r = 0.23$).
- (2) Exploitativeness: after conducting *post hoc* Mann–Whitney tests between study levels, it was found that Mann–Whitney *U* value was statistically significant $U = 3,098.5$ ($Z = -2.145$), $p = 0.032$ between full-time postgraduate students and part-time postgraduate students. Full-time postgraduate students reported higher scores regarding exploitativeness. This difference according to Cohen (1988) appears small ($r = 0.16$). In addition, a statistically significant Mann–Whitney *U* value $U = 689$ ($Z = -2.108$), $p = 0.035$ was found between full-time postgraduate students and doctoral students. Again, full-time postgraduate students scored higher than doctoral students. This difference, according to Cohen (1988), appears small to moderate ($r = 0.21$).

With regard to *H3*, a Kruskal–Wallis *H* test showed that there was not a statistically significant difference regarding NPI scores between those students that had various levels of business experience (Kruskal–Wallis $\chi^2(3) = 2.065$, $p = 0.559$). Additional Kruskal–Wallis tests were performed for individual NPI dimensions. Results revealed that there were statistically significant differences in authority, self-sufficiency, exploitativeness and vanity. In order to investigate which groups differ significantly, a series of *post hoc* Mann–Whitney *U* tests were performed:

- (1) Authority: Mann–Whitney *U* values were statistically significant a) $U = 1,442.5$ ($Z = -2.288$), $p = 0.022$ between those who do not have business experience and those that have only up to one year. This difference, according to Cohen (1988), appears small to moderate ($r = 0.21$), b) $U = 2,457.5$ ($Z = -2.817$), $p = 0.005$; those who do not have business experience at all and those who have business experience up to five years (small to moderate effect $r = 0.22$); and c) $U = 2,143$ ($Z = -2.873$), $p = 0.004$: those who do not have business experience at all and those who have

business experience for more than six years (small to moderate effect $r = 0.23$). In all three cases, students with no business experience scored lower.

- (2) Self-sufficiency: Mann–Whitney U value was statistically significant $U = 2,033.0$ ($Z = -2.913$), $p = 0.004$ between those who have up to one year business experience and those who have more than six years with an almost moderate effect ($r = 0.24$). Participants with more than six years of business experience scored higher on self-sufficiency.
- (3) Exploitativeness: Mann–Whitney U values were statistically significant a) $U = 2,193$ ($Z = -2.732$), $p = 0.006$ between those who do not have business experience and those who have more than six years with an almost moderate effect ($r = 0.22$) and b) $U = 3,682.00$ ($Z = -3.057$), $p = 0.002$ between those who have two- to five-year business experience and those who have more than six with an almost moderate effect ($r = 0.22$). In both cases, students with less years of business experience scored higher on exploitativeness.
- (4) Vanity: Mann–Whitney U values were statistically significant a) $U = 1,320.5$ ($Z = -2.992$), $p = 0.003$ between those who do not have business experience and those who have up to one year with an almost moderate effect ($r = 0.27$), b) $U = 2,599.0$ ($Z = -2.405$), $p = 0.016$ between those who do not have business experience and those who have two to five years of business experience with a small to moderate effect ($r = 0.19$), c) $U = 1,840.5$ ($Z = -3.685$), $p = 0.000$ between those who do have up to one year of business experience and more than six years of business experience with a moderate effect ($r = 0.3$) and d) $U = 3,641.5$ ($Z = -3.200$), $p = 0.001$ between those who do have two to five years of business experience and more than six years of business experience with a small to moderate effect ($r = 0.23$). Vanity seems to decrease as years of business experience increases and this is something particularly obvious in the last two cases.

Regarding $H4$, a Kruskal–Wallis H test (Table IV) showed that there was not a statistically significant difference regarding NPI scores between groups (Kruskal–Wallis $\chi^2(9) = 14.472$, $p = 0.106$). While there are findings relating narcissism and entrepreneurship (e.g. Mathieu and St Jean, 2013), we have not been able to find any statistically significant differences between those students that stated “the opening of their own company” as their career plan and other students with different career plans. However, we did find that there are statistically significant differences between groups regarding the trait of superiority (Kruskal–Wallis $\chi^2(9) = 17.018$, $p = 0.048$).

Again, after executing a series of *post hoc* Mann–Whitney U tests, statistically significant differences in superiority were found between those that aspire to be employed in the public sector and those students who are ambitious to work for a foreign MNC ($U = 234$, $Z = -2.267$, $p = 0.023$). More specifically, results of the analysis showed that students who are planning to work for a foreign MNC have higher sense of superiority than those who plan to be employed in the public sector. This sense of superiority is also prevalent when comparing the former group and those who just want to work for any private sector

Table IV.
Kruskal–Wallis Test
(NPI and NPI
Dimensions_Career
Plans)

	NPI	Authority	Self-sufficiency	Superiority	Exhibitionism	Exploitativeness	Vanity	Entitlement
$\chi^2(9)$	14,472	7,631	8,873	17,018	4,079	13,628	14,489	12,038
p	0,106	0,572	0,449	0,048	0,906	0,136	0,106	0,211

company ($U = 1,723$, $z = -2.027$, $p = 0.043$); to continue studying ($U = 7,485.5$, $z = -2.992$, $p = 0.003$); and to continue in the present company ($U = 1,131.5$, $z = -2.136$, $p = 0.033$). It was also found that there is a statistically significant difference between students that want to change employer and those who would like to change profession ($U = 31$, $Z = -2.098$, $p = 0.036$) that reported a higher sense of superiority as well.

Regarding $H5$, an analysis of variance showed that there were no statistically significant differences between personal income group means (ANOVA $F(5, 292) = 0.683$, $p = 0.637$). However, since the normality hypothesis was not sustained in the case of individual NPI dimensions across all personal income groups, the use of non-parametric statistical methods was decided to identify potential statistically significant differences between groups. A Kruskal–Wallis H test showed that there was a statistically significant difference only regarding vanity scores between the various income scores. In order to investigate which groups differ significantly, a series of *post hoc* Mann–Whitney U tests were performed. Table V presents the statistically significant Mann–Whitney U values.

The following table also shows that in most of the above cases lower personal income groups is related to higher vanity. While controversial, these results can be explained by the fact that vanity (as a trait of over exposing personal positive self-view and under emphasizing negative perceptions) offer excuses for personal failures, overestimations of efficacy, intelligence and excessive physical view that might compensate for lower income levels.

$H6$ was also investigated, after checking for normality NPI as well as individual NPI dimensions scores. It was found that dependent variables are not approximately normally distributed across all groups of the independent variable (family income). Hence, the use of non-parametric statistical methods was decided again to identify potential statistically significant differences between groups. A Kruskal–Wallis H test showed that there was a statistically significant difference regarding NPI scores between family income groups (Kruskal–Wallis $\chi^2(4) = 16.277$, $p = 0.003$).

Our findings show that on the four cases appeared in Table VI, students with higher family income tend to score higher regarding NPI. This finding agrees with previous research results (e.g. Traiser and Eighmy, 2011).

A similar procedure was undertaken for the case of individual NPI dimensions. A Kruskal–Wallis H test showed that there were statistically significant difference regarding authority, superiority, exhibitionism and entitlement among family income groups. In order to investigate which groups differ significantly, a series of *post hoc* Mann–Whitney U tests were performed. Table VII presents the statistically significant Mann–Whitney U values.

Mann–Whitney U	Z	p	Cohen's (r)	Personal income groups (in €)
788.00	-2.575	0.010	0.23 – small to moderate	0; over 30,000
658.00	-2.376	0.017	0.25 – small to moderate	5,001–10,000; 10,001–20,000
185.00	-2.392	0.001	0.45 – almost large	5,001–10,000; over 30,000
224.00	-2.060	0.039	0.29 – almost moderate	20,001–30,000; over 30,000

Table V.
Mann–Whitney U
results
(Vanity_Personal
Income)

Mann–Whitney U	Z	p	Cohen's (r)	Family income groups (in €)
1,348.5	-2.836	0.005	0.25 – small to moderate	Up to 20,000; 40,001–70,000
217	-2.789	0.005	0.29 – almost moderate	Up to 20,000; 70,001–90,000
2,170	-2.249	0.025	0.17 – small to moderate	20,001–40,000; 40,001–70,000
342.5	-2.613	0.009	0.23 – small to moderate	20,001–40,000; 70,001–90,000

Table VI.
Mann–Whitney U
results (NPI_
Family Income)

Table VII.
Mann–Whitney *U*
results (NPI
Dimensions_Family
Income)

Mann–Whitney <i>U</i>	<i>Z</i>	<i>p</i>	Cohen's (<i>r</i>)	Family income groups (in €)
<i>Authority</i>				
1,301	-3.102	0.002	0.27 – small to moderate	Up to 20,000; 40,001–70,000
231	-2.652	0.008	0.28 – small to moderate	Up to 20,000; 70,001–90,000
<i>Superiority</i>				
246	-2.499	0.012	0.26 – small to moderate	Up to 20,000; 70,001–90,000
321	-2.87	0.004	0.25 – small to moderate	20,001–40,000; 70,001–90,000
153.5	-2.125	0.034	0.28 – small to moderate	40,001–70,000; 70,001–90,000
<i>Exhibitionism</i>				
1,435.5	-2.446	0.014	0.22 – small to moderate	Up to 20,000; 40,001–70,000
240.5	-2.549	0.011	0.26 – small to moderate	Up to 20,000; 70,001–90,000
418	-2.012	0.044	0.18 – small to moderate	20,001–40,000; 70,001–90,000
<i>Entitlement</i>				
1,318.5	-3.039	0.002	0.27 – small to moderate	Up to 20,000; 40,001–70,000
241.5	-2.540	0.011	0.26 – small to moderate	Up to 20,000; 70,001–90,000
2,154	-2.356	0.018	0.18 – small to moderate	20,001–40,000; 40,001–70,000
402.5	-2.155	0.031	0.19 – small to moderate	20,001–40,000; 70,001–90,000

Table VII shows that students whose family income does not exceed €20,000 have lower authority scores in comparison with those students that come from a family with high income (€90,000).

Authority (in the context of narcissism) refers to skills of leadership and ambitions for leading and gaining power. Narcissistic individuals who are mentally framed in their own mirrors of personal omnipotence consider themselves as having absolute authority. This characteristic is also related to superiority, which, in our study, is higher in student groups with high family income (€70,000–€90,000) than student groups with lower family incomes. It is common that people reporting higher superiority to boast about their own successes, think they are special, like receiving compliments by other people and look down to all those they consider as being less accomplished.

Exhibitionism seems to be higher amongst students whose family income ranges from medium to high (€40,000–€90,000). It translates to a tendency for being to the center of attention and showing off.

Entitlement is getting higher as students family income is getting bigger. Our findings suggest that students with low family income (up to €20,000) have lower entitlement scores than students with medium and high family income (€40,000–€90,000). Entitlement in the context of narcissism is translated to personal beliefs of deserving favorable outcomes in any case.

6. Conclusions

The results support the view that the overall level of narcissism, in our sample of business students, does not differ from similar results reported in literature, in countries like the USA and Canada. This might be attributed to the fact that Greek business schools' curriculum and academic staff are mostly affected by the Anglo-Saxonic school of business thought. It is important to note that such similarity is not even affected as one would expect by the economic crisis in Greece (high unemployment, rising income inequalities, salaries cutbacks, etc.). To the best of our knowledge, there is no study investigating the narcissism of business students during economic crisis.

A higher overall score in narcissism is present in male participants in comparison with female participants, though not statistically significant. This is also true for all individual

NPI dimensions but one (vanity). Among the four study level groups, there was not a statistically significant difference in NPI scores; however, full-time MBA students seem to have a stronger sense of authority than undergraduate students and scored higher on exploitativeness than part-time and doctoral students.

More years of business experience lead to higher authority and self-sufficiency scores but to lower exploitativeness and vanity scores, which sounds logical as maturity (at work) grows. Even though in literature it is reported that students-entrepreneurs are more narcissists than other vocational groups, higher narcissism was not reported among the students of our sample with entrepreneurial intent. Perhaps, this could be related with the timing of this research, in which low aspirations and pessimism due to the harsh economic conditions, in combination with bureaucratic procedures that have been impeding the flourish of entrepreneurship in Greece, have somehow crumbled motivation for new ventures, youngsters' self-confidence and personal well-being.

Higher vanity scores were noted in those cases with lower personal income, while students that come from families with high income score higher on narcissism (something which support similar findings in literature) and on authority, superiority, exhibitionism and entitlement.

7. Implications

Previous research (Westerman *et al.*, 2012; Bergman *et al.*, 2010; Twenge *et al.*, 2008a; Blickle *et al.*, 2006; Campbell *et al.*, 2004) has shown that college students have become increasingly narcissistic, and business schools seem to attract more narcissistic students.

The testing of our research hypothesis suggests that individual NPI dimensions (such as authority, vanity, self-sufficiency, exploitativeness, entitlement) are associated with sex, age, study level and income. These findings call for attention to be paid, by business schools and employers.

Business schools constitute learning societies where character molding is taking place. They should neither underestimate character molding (teach/encourage/facilitate the correct ways to gain virtues) of students nor the consequences of possible (unproductive) narcissism to students, faculty, potential employers and society. For example, there are indeed cases in which students protest and claim higher grades (than those achieved during exams) and when they fail to get what they want, they sometimes insult faculty or raise issues of merit and injustice in the grading process. If these situations are not addressed by institutions with the help of suitable policies and practices, it is highly likely that they will be repeated not only in the educational context but also (and possibly combined with power) in the workplace and be translated to irrational decisions and managerial misbehaviors. In an era of required teamwork, participative decision making and interpersonal skills, graduates (as future employees) with high levels of narcissism may be problematic resources for business success, as they are associated with counter-productive behaviors.

In literature, there are several practices that can be adopted. Practices aiming to reduce narcissism among business schools include a strong responsible management orientation (e.g. PRME signatories), “soft” courses in curriculum and the provision of opportunities for service learning during internships. Of course, such practices would be of low value unless collaborative learning, team-working, regular and personalized performance feedback and guidance, role playing and simulations are adopted by the faculty in their teaching methodology portfolio (Bergman *et al.*, 2010). These practices enable students to view situations from multiple perspectives at the same time, to develop empathy and sensitivity but not in the expense of limiting initiatives or encouraging risk taking or innovative thinking (through business ideas' competitions, company projects, etc.). Of course, it must be noted that behavioral modeling by academic staff is crucial for harnessing students' unproductive narcissism. In order to be successful on that, they need to be supported by acquiring relevant knowledge and skills.

Companies on the other hand, as prospective employers, should shift their focus of selection from grades and problem-solving abilities to character issues (Crossan *et al.*, 2013) of their potential employee. While charisma, vision, creativity and risk taking may be among the positive dimensions of narcissism, it is supported that unproductive narcissism may endanger a company's journey to excellence through its impact on people, self-improvement, customer orientation, values, decision making and performance (Anninos, 2018). Through the use of psychometric tests and interviews they are expected to be able to diagnose narcissistic individuals during selection processes but also diagnose and eliminate companywide problematic situations through appropriate mechanisms and policies (e.g. obligatory seminars for and discussions with highly ranked executives about self-awareness and the ability to diagnose personal weaknesses, utilization of employee evaluation data, careful fact and behavior based selection of executives for promotion, development of emergency succession plans).

8. Further research issues

A comparative study in countries hit by economic crisis would be of interest to support or reject our findings.

Research can be replicated in a larger sample of public and private business schools to unveil potential differences in NPI and NPI dimensions' scores. Comparative studies can also be conducted in other (non-western) cultures. One more comparative study could be conducted in business schools globally that are either accredited or they have adopted the principles for responsible management, to investigate whether their strong orientation to ethics and sustainability and broader business education perspective harnesses unhealthy narcissism and/or cultivates the positive characteristics of narcissism.

9. Limitations

Though the study provides useful insights, it has some limitations. First, it was conducted in a regional country; second, the participants were students of public higher education institutions only; and, third, the questionnaire was self-reported, and this could lead to likely social desirability effects. So, caution must be exercised in generalizing the findings to public and private business schools as well as to countries with different context and culture.

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Association between organizational norms and employee productivity in higher education

Organizational norms and employee productivity

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Abstract

Purpose – The purpose of this paper is to investigate the impact of organizational norms on employee productivity within the higher education sector in UAE.

Design/methodology/approach – A quantitative research approach was used to investigate 89 respondents from higher education institutions. An online survey approach was used to investigate the opinions of respondents with regard to the impact of organizational norms on employee productivity in UAE. The data were then statistically analyzed using SPSS version 22.

Findings – The results showed a positive association between the investigated organizational norms and employee productivity. Furthermore, there was a significant relationship between age and organizational norms. Increase in employee age corresponds to an increase in employee productivity.

Originality/value – This study has made a novel contribution, since there is a significant lack of research surrounding the influence of organizational norms on employee productivity in the higher education institutions in UAE.

Keywords Organizational norms, Employee productivity, Higher education, United Arab Emirates.

Paper type Research paper

Introduction

Sustainability increases as a result of organizational development on the basis of effectiveness. Previous studies have revealed excessive passive/defensive and aggressive/defensive cultural norms in higher education institutions (Zeine *et al.*, 2011). There is a significant impact of organizational culture on fostering or decreasing employee productivity and commitment (Ramdhani *et al.*, 2017). Organizational culture developed in various organizations consists of effective values and norms that are important to develop a healthy organizational environment (Hogan and Coote, 2014). Such norms are an imperative factor that influences the effectiveness of employee performance and productivity. The performance of employees comprises of the actual output of the organization that is evaluated against its intended outputs (Ahmed and Shafiq, 2014). Therefore, the organizations greatly need to enhance the productivity and performance of their employees by inculcating a greater level of positivity in their norms.

Organizational culture is, however, controlled by effective leadership, creating either positive and negative impact over employees' productivity and performances (Skaik and Othman 2015). Work engagement in multiple business and educational working environments is based on the developed psychology and mindsets of employees through effective behaviors. Furthermore, a competitive leadership promotes teamwork and communication among employees working in higher educational systems (Boies *et al.*, 2015). The success stories of an organization as well as the employees are highly dependent on the developed organizational culture. The competency level of employees is often acknowledged



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by effective leaders to develop a culture that promotes and appreciates the hard work of its employees (Nyukorong, n.d.).

UAE is represented as an international business hub (Sharma, 2017); therefore, it is highly important to conduct an adequate research for analyzing the influence of organizational culture on employee productivity specifically in the given region. Limited studies were conducted particularly in analyzing the effects of organizational norms on the productivity of employees working in UAE. In the present world, organizational institutions are serving significant interest to ensure the development of healthy organizational norms that help in providing valuable output (Singh *et al.*, 2016). In order to strengthen the employees' workforce, various higher education institutions are working to promote effective communication among employees to maintain the standard of institutions. Various organizations and institutions are aware of the need of effective practices that foster the organizational environment (Marquis and Raynard 2015). The topic, however, is significantly important in both business and higher education world, to sustain the development of institutional values. Besides this, institutions in United Arab Emirates are now focusing in managing a balance between workload and employee's productivity. To ensure efficient performances, various training sessions are now being arranged to enhance the abilities of employees leading toward organizational and individual success (Parakandi and Behery, 2016).

The organizational culture in various higher educational institutions relies on the development of teachers. The focus is not only provided to professional training but also in the formation of pleasant organizational norms that promotes teamwork, communication, profitability and creativity of an employee. The psychological climate provided in any organization creates a valuable influence on employees' performances. The harmonization of various intra groups promotes the sharing of knowledge and ideas stimulating workforce to share knowledge. An effective institution works to develop an idea of organizational culture through constant developments in organizational norms. Globalization has enabled institutional management to improvise the developed organizational norms for better results. Due to various internal and external changes, institutions in UAE are working to foster the organizational environment (Baker-Shelley *et al.*, 2017).

Healthy organizational norms in any higher educational institutions create a positive impact on both employees and student's achievement (Wilkins *et al.*, 2016). The identification of healthy organizational culture is identified through the attitudes, behaviors, performances and productivity of an employee and organization. The key attribute is the development of an effective relationship between colleagues along with the healthy engagement with customers. In various universities of UAE, knowledge sharing behavior of employees has provided an effective contribution to the development of higher educational institutions of the Arab world. Various organization management experts have provided interest in the development of strategies that can positively affect the rotational norms. The idea is significant in promoting effectual collaboration to promote profitable organizational performances leading to a sustainable institutional competitiveness. This will promote the exchange of information and valuable knowledge that may further effect on employees' performances and organizational productivity (Skaik and Othman, 2015).

Recent studies have highlighted the lack of literature regarding the impact of organizational culture on the delay of constructional projects, undertaken in UAE (Arditi *et al.*, 2017). Therefore, the present study aims to make a novel contribution by emphasizing the relationship between organizational norms and the productivity of employees in higher education institutions within UAE. The study has assessed the extent of the impact of organizational norms on productivity, including the extent to which organizational norms enhance employee productivity. Moreover, the study has evaluated the extent of the impact of organizational norms on the employees. Significance of the study can be identified through the information providing the relationship between employee age and leadership,

an association which has not been sufficiently explored by the recent literature. Due to the given reasons, the present study is novel as it offers rare insight on the close association between the age of employees and the organizational norms. Moreover, the results of this study are significant as the author could not recall much studies that meet the context provided in this study, although there are an abundant number of studies addressing engagement and employee productivity. The amount of data provided by the study is valuable, as the relationship between organizational norms and employees' productivity is studied by including multiple variables.

Policy makers working in UAE can be highly benefitted from the study. Besides this, the findings of this study can be generalized on other organizations that may help in improving the quality of pre-developed organizational culture. Managerial personalities working in higher educational institutions of UAE can evaluate their organizational norms through the given study. Finally, the study is important for future researchers to collect important information illustrated in the findings of this study.

Literature review

Employee performance/productivity

The concept of organizational culture is comprised of shared values and norms that inform employees about how they should perceive, think, feel and behave in relation to organizational problems (Ostroff *et al.*, 2013). Organizational culture plays a dual role as it affects the performance of employees and overall organization. A study conducted by Hartnell *et al.* (2016) suggested that organizational norms greatly impact employee performance and enable them to reach the organization's targeted and desired outcomes. The effective changes in the organization can only result, when there are changes being promulgated in the organizational culture (Alvesson and Sveningsson, 2015). For Alvesson and Sveningsson (2015), changes in an organizational culture refer to the alteration in behavioral patterns of employees that hinder the provision organizational effectivity.

Employees are considered as an important asset of the organization; however, it is difficult to retain employees with optimal performance (Randhawa, 2017). Most organizations target optimal employee performance to achieve high work productivity. Organizational culture is among the external factors that affect the employee performance. Nyayu (2017) in his paper analyzed the innovation of organization management and factors affecting the organizational management. The results depicted that management within an organization is supported by management maturity, information technology systems and organizational culture concepts. It is not acceptable to separate the success of the institution in carrying out its vision and mission from the readiness of human resources and facilities that are available (Chatman and O'Reilly, 2016).

Hahn *et al.* (2015) presented a clear-cut relationship between organizational culture and its impact on employee creativity in system integration companies. The idea is significant as there is visibly a positive impact of an increase in employee creativity on the overall employee performance (Hur *et al.*, 2016). Similarly, Naranjo-Valencia *et al.* have highlighted the impact of organizational culture on a company's innovation and its overall performance by depicting the strong relationship between employee performance and organizational performance (Barrick *et al.*, 2015). The employee motivation and satisfaction are amongst the key components of a highly effective organizational culture (Kontoghiorghes, 2016). Moreover, factors such as respecting employees, supporting creativity, honest communications and cultivating an environment of learning play an important role in defining a positive organizational culture (Kontoghiorghes, 2016). It indicated an effective need to adopt transformational styles of leadership rather than bureaucratic ones and focus on the employees rather than the rigid implementation of organizational policies (McCleskey, 2014). Furthermore, the

employees were only expected to meet their organizational goals, leaving little or no room for innovation and creativity (Khan, 2017).

The performance of an employee working in any educational institution is further affected through the shared relations between management and employees (Tansel and Gazioğlu, 2014). The idea is correlated with the satisfaction and productivity of an employee (Hanaysha, 2016a, b). The strong relationship between management and employees in any higher education system is important to develop a sense of motivation and loyalty among employees. This will further impact the productivity of an organization, since the workforce is highly motivated and enjoys pleasant organizational norms (Alonderiene and Majauskaite, 2016).

Another study highlighted a strong association between management–employee relations and employee satisfaction and productivity (Tansel and Gazioğlu, 2014). The study specified that to build employee engagement, it was first necessary to develop a strong relationship between the management and the employees at any organization. The power-based dynamics and a hierarchical autonomous relationship between managers and employees were to be avoided as much as possible. These factors had a significant impact on employee motivation and loyalty, which affected the productivity of the employees. In fact, employee productivity was shown to have a significant effect on the level of motivation expressed by the employee, a finding which was consistent with that reported by Cascio (2018). Employee motivation and productivity have a bi-directional relationship, since motivating employees was also found to have a significant effect on their productivity levels (Zameer *et al.*, 2014; Lazaroiu, 2015; Kiruja and Mukuru, 2018).

A majority of the academic relationships within higher education institutions are characterized on the basis of supervisory and managerial leadership. Humiliation at the workplace because of bullying, belittlement and abusive supervision are likely to be experienced by the students and trainees that reflect the defensive organizational culture. The current higher education operating structures affect central to effective undergraduate, graduate and post-graduate training, and supervisory/managerial leadership practices. A similar study conducted by Zeine *et al.* (2014) showed that change in the dynamics of internal professional interactions helps in improving the effectiveness of higher education institutions through the adoption of constructive organizational culture norms and applying individualized consideration and positive transference behavior (Zeine *et al.*, 2015).

A study suggested that leadership styles play an influential role in employee productivity (Nasution *et al.*, 2016). Transformational leadership refers to the ability of a leader to transform the organizational culture, based on charismatic leadership practices (McCleskey, 2014). Additionally, it was highlighted that the implementation of a transformational style of leadership showed a strong correlation with the job satisfaction of the employees, due to which their productivity levels were greatly enhanced (Choi *et al.*, 2014; Top *et al.*, 2015). For instance, the use of humor in leader–employee interactions was significantly associated with improvements in the work engagement levels of employees, through which their productivity level was greatly enhanced (Goswami *et al.*, 2016). This may be greatly contrasted with the implementation of tyrannical leadership and dictatorial management policies, which are shown to have a detrimental effect on the level of job satisfaction experienced by employees (Skogstad *et al.*, 2015; Sun *et al.*, 2016; Mathieu *et al.*, 2014). Therefore, leaders are to improve their leadership skills and management policies for promoting well-being and satisfaction levels among their employees to increase their productivity level (Kelloway and Dimoff, 2017).

Uddin *et al.* (2013) studied the relationship between organizational culture and its impact on employees' productivity. The idea was studied under different cultural perspectives that include behavioral and gestural characteristics. The findings of the study illustrated that organizational culture and performances are directly related to each other, as a healthy organizational culture facilitates team interactions leading toward the achievement of shared organizational goals.

The role of innovativeness on employee productivity was further suggested by the study conducted by Dodge *et al.* (2017). This stance had earlier been consolidated by Alvarez *et al.* (2015), who maintained that there was a significant impact of technological or non-technological innovation on the productivity levels of employees, with respect to the services sector in Chile. In this context, the study highlighted the size of firms to be a key factor associated with innovation-based expenditure and the likelihood of developing novel products or services. For this reason, innovation is more commonly noted in larger firms as compared to small and medium-sized businesses (SMEs). Another study stated a significant association between healthy manager–employee relations and innovativeness (Chen *et al.*, 2016).

Organizational norms in higher education

An earlier study highlighted that firms needed to reorient their organizational norms and value systems, rather than solely emphasizing on stakeholders and policy-making, so that effective changes in the organizational culture may be promulgated (Stewart, 2010). Certain parameters of employee performance including employee participation, innovation, reward system and openness of communication are significantly affected by the organizational norms and culture (Tong *et al.*, 2015). A recent study highlighted that employee participation or commitment played a vital role to affect shifts in employee performance (Lee and Steers, 2017). However, the role of innovation and reward systems in affecting employee performance has been discussed in the study conducted by Shields *et al.* (2015).

Besides this, the transparency in communication between employees helps in the development of confidence in employees resulting in the development of increased efficiency in overall performances (Kim *et al.*, 2017). Therefore, it has been observed that organizational norms play a highly effective role in employee performance and organizational profitability. Njiru and Nyamute (2018) investigated the impact of employee engagement on the performance of research and training state corporations. The findings illustrated that demographic characteristics of age, tenure and level of education help in the development of smooth employee relationships providing a moderating effect on employee engagement and performance (Llopis and Foss, 2016). Therefore, employees need to consider the personality traits to hire and assign responsibilities to employees.

There is a significant impact of organizational culture on the variety of organizations process, employees and its performance. Huma and Hukam (2018) investigated the impact of organizational communication on organizational performances. The results showed that there was a significant effect of organizational communication on organizational performance (Boies *et al.*, 2015). The results clearly recommended the adoption of effective communication means for addressing the issues that affect organizational performance. It has been shown that the performance toward achieving the overall organization goals increases when the employees are committed and have the same norms and values as per organizations (Shahzad *et al.*, 2012). A study has also shown a significant positive correlation between employee performance and the dimensions of organizational citizenship behavior (Dinka, 2018). It is expected that the study would provide understanding regarding the relationship between different dimensions of organizational culture with organizational performance as stated by Imam *et al.* (2013).

Besides this, a greater importance is given to the idea of providing an organizational environment that is psychologically acceptable for employees working in different organizations (Edmondson *et al.*, 2016). Leadership effectiveness plays an important role to provide an acceptable organizational norm (Demirtas, 2015). The professional culture developed in any higher educational institutions at times creates hindrance for learners and working professionals. The organizational culture developed at various universities is set on the principles of learning and knowledge sharing. The concept of employees and management relationship is crucial in this regard. The diversity and complexity in such employee relations influence the culture of an organization (Vasyakin *et al.*, 2016).

Relationship between employee's age and performance/productivity

Hitka and Balážová (2015) provided a relationship between employees age and the level of motivation in them. In most of the elderly employees the level of motivation is significantly low (Inceoglu *et al.*, 2012), while the level of performance and productivity provided by old aged employees is high, due to maximum experience and knowledge (Kordbacheh *et al.*, 2014). Other concerns regarding a senior employee are that they provide minimum concerns to training and development plans. Creating motivational programs is crucial in this regard. Besides that, the level of motivation among employees changes after the passage of time, due to change in employees need (Dobrow Riza *et al.*, 2018). Therefore, it is important to arrange motivational programs after frequent intervals to meet the need of employees belonging to different age groups.

The ability of learning and development in employees differs in age. Dello Russo *et al.* (2017) illustrated that older employees are not open to learning at a level in comparison to young employees, also they are unlikely to adopt relevant changes in the working environment. Kooij and Zacher (2016) stated that for old aged workers, the interference of time and goal setting in everyday work-related operations changes from time to time. Young workers are energetic and are highly motivated in comparison to those of old age. Besides this, the quality of work differs in both groups, leading toward additional opportunities and employee development.

Sharma (2017) studied the relationship between employees' performance and age. The study was conducted in information technology companies to analyze the given objective in different fields of work. However, the findings of the study illustrated the inverse relationship between two variables. Maximum experience and expertise of any employee provide him an efficient understanding of daily tasks. Old aged employees are generally more productive at their performance due to maximum knowledge and skilled abilities.

Maurer (2001) studied the behavior and attitude of aged employees in terms of learning, developmental and leadership skills. The research is important as it provides firm emphasis over ability and tendency of old employees in participating in the learning and developmental activities. The paper explored that young workers are more motivated in such programs in comparison to old aged employees. The effects of increasing age may result in the decline of skills and abilities required to direct the employees according to the requirements of the present world. Furthermore, old aged employees are unlikely to participate in leadership activities resulting in low scale output.

Wegge *et al.*, (2012) studied the impact of age diversity on the effectiveness of teamwork. Other complexities such as employees' attitudes and behaviors were also a part of this study. The finding of the study illustrated that effective teamwork is highly influenced by significant age differences among employees. The research, however, suggested providing training sessions to employees that is helpful in minimizing the mindsets regarding age stereotypes. The research further suggested that team composition and leadership related actions must be reviewed while considering the age diversity of employees.

Inceoglu *et al.* (2012) examined the level of pride and motivation among employees belonging to different age groups. The relationship between the two variables was significant in this regard. Through statistical analysis of the given variables, it was found that young employees usually encompass high level motivation and pride during everyday work-related tasks. Besides this, a general decline in pride and motivation was observed by the increase in employees' age.

The above section provides significant insight into the literature studied in the past few years in a similar context. As provided above, the quality and context of each study differ. The role of organizational norms in the development of employee is crucial. Besides this, organizational culture is important in effecting the level of performance and productivity of employees. Relationship between employees' performance and age available in few

literary studies. The significance of this study lies in the fact that it provides a combined relationship between organizational norms and employee productivity specifically in the higher education sector of UAE.

On the basis of the aforementioned studies, strong grounds were obtained for investigating the relationship between similar factors of organizational norms and employee productivity in less-explored regions such as the higher education sector in UAE. Statistically, the correlation and significance levels depicted positive relationships between organizational norms and employee productivity, demonstrating that there is an association between these two factors. The present study has developed the following hypothesis, due to a lack of studies with respect to organizational culture and employee performance in UAE:

H0. There is no association between organizational norms and employee productivity.

H1. There is an association between organizational norms and employee productivity.

Methodology

Study design

The study has employed a quantitative research approach. The data were collected through a survey by investigating the employees and instructors at various institutions of higher education in UAE.

Sampling and study participants

A random sampling technique has been used to recruit participants based on a random purpose. The selection of the participants was based on their knowledge and awareness with respect to the norms and values practiced in their respective schools. In this regard, a total of 167 students were initially targeted from ten different schools. However, 78 participants did not respond or show lack of interest toward the study. Therefore, a total of 89 respondents were gathered using a random sample of higher education institutions making a response rate of 53.2 percent. For instance, the professors from ten different schools with around nine professionals from each school were randomly selected and included in the study.

Study instrument

The study instrument used in this study was an online survey that investigated the opinions of employees and instructors with regard to the impact of organizational norms on employee productivity in UAE, in addition to nine other factors of interest. The questionnaire identified norms of behavior in ten important categories like organizational/personal pride, performance/ excellence, teamwork/communication, leadership/supervision, profitability/cost effectivity, colleague/associate relations, customer/client relations/ innovativeness/creativity, training/development and candor/ openness. Organizational norms were regarded as the independent variable, whereas employee productivity was considered to be the dependent variable.

Validity and reliability

A pilot testing was performed to investigate the impact of organizational norms on employee productivity in UAE, in addition to nine other factors of interest. The reliability of the questionnaire considering 15 participants came out to be 0.78 (Table I).

Cronbach's α	No. of items
0.78	10

Table I.
Reliability statistics

Study measures

The questionnaire consisted of an integration of previously validated scales and items that were specifically developed. It was formulated on the basis of a previous study that examined the impact of organizational culture and its impact on employee performance and job satisfaction (Stephen and Stephen, 2016). A principle component analysis of single independent variables was conducted based on the impact of organizational norms on productivity/performance, teamwork/communication, leadership/Supervision, profitability/cost effectivity, colleague/associate relations, customer/client relations/innovativeness/creativity, training/development and candor/openness. This analysis resulted in a pattern matrix of team factors, where each factor has either three, four or five items to measure the responses.

Study procedure

A five-point Likert scale was used to grade the responses that ranged from “strongly agree” to “strongly disagree.” The impact of organizational norms on employee productivity was measured using five items to capture productivity expectations, four items to capture personal pride, five items for teamwork and communication, and five points for leadership and supervision. Additionally, four items were used to capture profitability and cost effectiveness, three items to capture associate relations, four items for client relations, four items regarding creativity, four items for training and development and the last four items to achieve openness. Within the questionnaire, the higher percentages for each of these categories depicted a greater efficiency of the organization and a higher level of employee satisfaction.

The first index was organizational or personal pride consisting of four items, in which higher scores were to be achieved with regard to organizational health, vitality and success. The second index was performance excellence, or productivity comprising of five items, in which high scores represented a consistent drive to achieve personal and organizational excellence. The third index represented teamwork or communication, where high scores were indicative of open information-sharing and assistance between employees. The fourth index represented leadership or supervision. Leadership was taken to refer to technical skills, consideration of employee problems and strength of character. The fifth index represented profitability and cost effectiveness referring to economic and financial factors that contributed to organizational success, as a lack of concern for company property and expenses is often indicative of poor morale and beliefs. The sixth index highlighted colleague or associate relations that require social interactions and a sense of belonging to perform well at an organization. The seventh index referred to customer/client relations that highlighted the effective role of the behavior of each employee to reflect the overall integrity and professionalism of the organization. The eighth index represented innovativeness and creativity, which depicted that employees who exercise creativity render an overall better performance. The ninth index referred to training and development highlighting the necessity of training and development for all the levels and classifications of employees. Finally, the last index reflected candor or openness, where the scores represent respondent’s honest and free-flowing communication.

Statistical analysis

The responses obtained through survey analysis were statistically analyzed using SPSS version 22. Descriptive statistics were used to find out the mean and standard deviation, whereas regression and correlational analyses have been used to study the impact of organizational norms on employee productivity within the higher education sector in UAE.

Results

Employee productivity is positively correlated with organizational norms

A majority of the respondents scored highest in the customer/client relations category, meaning that the overall integrity and professionalism of the organization were held in high consideration by these respondents. The second highest score was noted in the category of leadership and supervision, which referred to technical skills, employee problem consideration and character strength. Finally, the third highest score was noted in the training and development category. The last two categories in which the respondents scored the highest were organizational/personal pride and openness/candor.

Descriptive statistics (mean and standard deviations)

The results shown in Table II represent the mean and standard deviation of the independent and dependent variables. The mean value for organizational norms was 12.733, which indicated a central tendency of variables for a total of 89 responses.

Negative correlation between performance/productivity and organizational norms

Table III presents the correlation between performance/productivity and organizational norms. The negative correlation was found between performance and productivity, whereas there was a strong negative relationship with organizational norms, thereby rejecting the null hypothesis. There was a significant difference in the performance/productivity, standing at a value of 0.823, which indicated a strong relationship between performance/productivity and organizational norms.

	<i>n</i>	Mean	SD
Personal pride	89	68.83	35.7314
Performance/productivity	89	72.00	43.875
Team work	89	70.67	32.997
Leadership	89	79.67	43.435
Profitability	89	68.00	54.0882
Colleague	89	92.55	42.2755
Customer	89	95.00	46.2182
Innovative	89	67.83	48.7357
Development	89	87.50	39.1421
Openness	89	66.78	54.3046
Organizational norms	20.9000	12.733	30
Valid <i>n</i> (listwise)	89		

Table II.
Descriptive statistics

	Organizational norms	Performance/productivity
<i>Organizational norms</i>		
Pearson correlation	1	-0.083
Sig. (2-tailed)		0.823
<i>n</i>	89	89
<i>Performance/productivity</i>		
Pearson correlation	-0.083	1

Table III.
Correlations

Low impact of performance/productivity on organizational norms

The results shown in Table IV depict the impact of organizational norms on employee productivity. The value of the adjusted R^2 was 0.036, which represented a variation in employee productivity, amounted to 3.6 percent. Therefore, 3.6 percent of the total variability in organizational norms was explained by the productivity. The findings have shown a low impact of performance/productivity on organizational norms due to a p -value of 0.962, which is greater than 0.05. Besides this, reductions in organizational norms reduced organizational productivity by less than one unit. The standard deviation of organizational norms decreases the productivity by -0.009 unit.

Low impact of personal pride on age

Table V highlights the correlation for age and personal pride. There is a weakly positive relationship, shown by the p -value for personal pride as equal to 0.208. The two-tailed deviation was noted here, where age has shown a p -value of 0.271.

The results in Table VI have investigated the impact of personal pride on age. The value of the adjusted R^2 square was 0.006, which represented a variation in employee productivity, amounted to 9 percent. Therefore, 9 percent of the total variability in age was explained by the personal pride. The findings have shown a low impact of personal pride on age due to a p -value of 0.471, which is greater than 0.05. The results supported in the study of Inceoglu *et al.* (2012) provide an inverse relation between the given variables of pride and age. The findings of the study illustrate that the increase in employees' age decreases the personal pride of employee and vice versa.

Table IV.
Regression analysis
for organizational
norms and
performance/
productivity

Model 1	R	R^2	Adjusted R^2	SE of the estimate	R^2 change	Change statistics			Sig. F -change		
Organizational norms	0.006 ^a	0.000	-0.046	53.544	0.000	0.002	1	35	0.962		
	Unstandardized coefficients		Standardized coefficients			95.0% confidence interval for B			Correlations		
Model 1	B	SE	β	t	Sig.	Lower bound	Upper bound	Zero-order	Partial	Part	
(Constant)	50.545	32.976		0.821	0.550	-47.228	65.317				
Organizational norms	-0.082	8.618	-0.009	-0.055	0.932	-9.456	8.271	-0.009	-0.009	-0.009	

Notes: ^aPredictors: (Constant), Performance/Productivity; ^bdependent variable: performance/productivity

Table V.
Correlations

	Age	Personal pride
<i>Age</i>		
Pearson correlation	1	0.402
Sig. (2-tailed)		0.271
n	89	89
<i>Personal pride</i>		
Pearson correlation	0.402	1
Sig. (2-tailed)	0.251	
n	89	89

Low impact of performance on age

The findings have presented a weak relationship between age and performance, as illustrated by the *p*-value (0.292) (Table VII). Therefore, weak evidence against the alternative hypothesis was provided, due to which it may be rejected. Therefore, the results indicated that there was no association between age and performance, as evidenced by the significant impact of age on performance.

Low impact of teamwork on age

The findings have shown that there was a weak relationship between age and teamwork, as illustrated by the *p*-value (0.688). Therefore, weak evidence against the alternative

Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
						<i>F</i> -change	df1	df2	
Personal pride	0.408 ^a	0.073	0.006	53.1569	0.073	4.261	1	35	0.471
Model 1	Unstandardized coefficients		Standardized coefficients					95.0% confidence interval for <i>B</i>	
	<i>B</i>	SE	β	<i>t</i>		Sig.		Lower bound	Upper bound
(Constant)	-14.023	49.641		-0.710		0.416		-70.277	60.132
Age	6.687	10.123	0.208	4.123		0.721		-8.667	49.148

Notes: ^aPredictors: (constant), age; ^bdependent variable: personal pride

Table VI. Regression analysis for age and personal pride

Correlation

	Performance/productivity	Age
Pearson correlation		
Performance/productivity	1.000	-0.023
Age	-0.023	1.000
Sig.		
Performance/productivity		0.646
Age	0.646	
<i>n</i>		
Performance/productivity	89	89
Age	89	89

Regression analysis

Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
						<i>F</i> -change	df1	df2	
Performance/productivity	0.023 ^a	0.000	-0.029	78.549	0.000	0.006	1	35	0.292
Model 1	Unstandardized coefficients		Standardized coefficients					95.0% confidence interval for <i>B</i>	
	<i>B</i>	SE	β	<i>t</i>		Sig.		Lower bound	Upper bound
(Constant)	15.840	71.542		0.540		0.578		-62.826	85.976
Age	-0.707	10.712	-0.023	-0.050		0.292		-54.365	33.413

Notes: ^aPredictors: (constant), age; ^bdependent variable: performance/productivity

Table VII. Comparison between age and performance

hypothesis is provided, due to which it may be rejected. Furthermore, the correlation section presents that the value of the Pearson correlation between age and teamwork was 0.027 (Table VIII). This depicted a direct positive correlation, indicating that an increase in one variable will correspond to an increase in the other variable. Therefore, the results indicated that there is an association between age and teamwork, as evidenced by the significant impact of age on teamwork.

Significant impact of leadership on age

The results have shown a significant relationship between age and leadership, as illustrated by the *p*-value (0.851) (Table IX). Therefore, weak evidence against the null hypothesis is provided, due to which it may be rejected. Furthermore, the correlation section shows that the value of the Pearson correlation between age and leadership is -0.132. This is a direct negative correlation, indicating that an increase in one variable will correspond to a decrease in the other variable.

Low impact of profitability on age

There was a weak relationship between age and profitability, as illustrated by the *p*-value, which stands at 0.067 (Table X). Therefore, weak evidence against the null hypothesis is provided, due to which it may be rejected. Furthermore, the correlation section showed that the value of the Pearson correlation between age and profitability was 0.064. This was a direct positive correlation, indicating that an increase in one variable corresponds to an increase in the other variable. Therefore, results indicated that there is an association between age and profitability, as evidenced by the significant impact of age on profitability.

Significant impact of colleague relations on age

The results have shown that there was a significant relationship between age and the colleague relations, as illustrated by the *p*-value (0.042). The Pearson correlation shows that

<i>Correlations</i>									
	Team work				Age				
Pearson correlation									
Team work				1.000					0.019
Age				0.019					1.000
Sig.									
Team work									0.555
Age				0.555					
n									
Team work									89
Age									89
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
dimension0	0.027 ^a	0.001	-0.085	37.465	0.001	<i>F</i> -change	df1	df2	
						0.010	1	35	0.688
<i>Coefficients^b</i>									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	52.612	35.342		4.668	0.126	-5.385	67.059		
Age	0.776	8.784	0.027	0.132	0.688	-9.211	19.467		

Table VIII. Comparison between age and teamwork

Notes: ^aPredictors: (constant), age; ^bdependent variable: team work

<i>Correlations</i>									
		Leadership				Age			
Pearson correlation									
Leadership		1.000				-0.132			
Age		-0.132				1.000			
Sig.									
Leadership						0.295			
Age						0.295			
<i>n</i>									
Leadership		89				89			
Age		89				89			
<i>Model summary</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Leadership	0.132 ^a	0.023	-0.050	34.779	0.035	<i>F</i> -change	df1	df2	0.851
						0.284	1	35	
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients				95.0% confidence interval for <i>B</i>		
	<i>B</i>	SE	β	<i>t</i>	Sig.	Lower bound	Upper bound		
(Constant)	62.690	23.440		5.269	0.057	9.688	72.511		
Age	-5.964	9.057	-0.132	-0.845	0.581	-44.372	10.444		

Table IX. Comparison between age and leadership

<i>Correlations</i>									
		Profitability				Age			
Pearson correlation									
Profitability		1.000				0.064			
Age		0.064				1.000			
Sig.									
Profitability						0.398			
Age						0.398			
<i>n</i>									
Profitability		89				89			
Age		89				89			
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Profitability	0.064 ^a	0.004	-0.045	43.6252	0.003	<i>F</i> -change	df1	df2	0.067
						0.072	1	35	
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients				95.0% confidence interval for <i>B</i>		
	<i>B</i>	SE	β	<i>t</i>	Sig.	Lower bound	Upper bound		
(Constant)	44.939	68.795		0.975	0.242	-23.561	63.439		
Age	5.668	11.856	0.064	0.258	0.778	-15.328	17.665		

Table X. Comparison between age and profitability

a weak association between age and colleague relations is 0.178. The direct positive correlation indicated an increase in one variable that corresponds to an increase in the other variable (Table XI).

Low impact of customer relationship on age

The findings have shown a weak relationship between age and customer relationship, as illustrated by the *p*-value (0.269) (Table XII). The results showed a direct positive correlation, indicating that an increase in one variable will correspond to an increase in the other variable. Therefore, the results indicated that there is a low impact of age on customer relationship.

Low impact of innovativeness on age

There was a weak relationship between age and innovativeness, as illustrated by the *p*-value (0.719). Therefore, weak evidence against the null hypothesis is provided, due to which it may be rejected. Furthermore, the correlation shows that the association between age and innovativeness is 0.040, indicating that an increase in one variable will correspond to an increase in the other variable (Table XIII). Therefore, the results indicated that there is a low impact of age on innovativeness.

Significant impact of development on age

The results in Table XIV have shown the significant relationship between age and development, as illustrated by the *p*-value 0.023. Therefore, strong evidence against the null hypothesis is provided, due to which it may be rejected. Furthermore, the correlation shows

<i>Correlations</i>									
		Colleague			Age				
Pearson correlation									
Colleague		1.000			0.178				
Age		0.178			1.000				
Sig. (1-tailed)									
Colleague					0.182				
Age		0.182							
<i>n</i>									
Colleague		89			89				
Age		89			89				
<i>Model summary</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Colleague relations	0.178 ^a	0.042	0.000	66.2636	0.042	<i>F</i>	df1	df2	
						1.012	1	35	0.232
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	43.284	29.271		1.080	0.303	-25.240	82.808		
Age	9.353	9.136	0.178	1.106	0.323	-16.585	37.292		
Notes: ^a Predictors: (constant), age; ^b dependent variable: colleague									

Table XI.
Comparison between age and colleague relations

<i>Correlations</i>									
	Customer relationship				Age				
Pearson correlation									
Customer	1.000				0.116				
Age	0.116				1.000				
Sig.									
Customer					0.189				
Age	0.189								
<i>n</i>									
Customer	89				89				
Age	89				89				
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Customer relationship	0.116 ^a	0.066	-0.007	63.3671	0.006	<i>F</i> -change	df1	df2	0.269
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	49.818	38.651		1.132	0.279	-28.387	85.023		
Age	8.055	9.811	0.116	0.681	0.369	-9.899	32.909		

Table XII. Comparison between age and customer relationship

<i>Correlations</i>									
	Innovativeness				Age				
Pearson correlation									
Innovativeness	1.000				0.040				
Age	0.040				1.000				
Sig.									
Innovativeness					0.369				
Age	0.369								
<i>n</i>									
Innovativeness	89				89				
Age	89				89				
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Innovativeness	0.040 ^a	0.004	-0.033	47.1447	0.003	<i>F</i> -change	df1	df2	0.719
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	19.999	35.189		4.119	0.237	-34.115	68.114		
Age	4.264	9.733	0.040	0.276	0.719	-11.431	15.995		

Table XIII. Comparison between age and innovativeness

Notes: ^aPredictors: (constant), age; ^bdependent variable: innovativeness

<i>Correlations</i>									
	Development				Age				
Pearson correlation	Development				Age				
	1.000				-0.398				
	Age				1.000				
Sig.	Development				Age				
	0.014				0.014				
n	Development				Age				
	89				89				
	Age				89				
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	Change statistics			Sig. <i>F</i> -change
Development Coefficients ^b	0.398 ^a	0.132	0.151	49.1911	0.132	<i>F</i> -change	df1	df2	0.033
	Unstandardized coefficients		Standardized coefficients		95.0% confidence interval for B				
Model 1	<i>B</i>	SE	β	<i>t</i>	Sig.	Lower bound	Upper bound		
(Constant)	79.005	36.317		4.314	0.000	58.581	105.428		
Age	-15.357	5.084	-0.398	-2.732	0.023	-28.798	-0.911		
Notes: ^a Predictors: (constant), age; ^b dependent variable: development									

Table XIV.
Comparison between
age and development

that an association between age and development is 0.398. Therefore, the results indicated that there is a low impact of age on this factor.

Low impact of openness on age

There was a weak relationship between age and openness, as illustrated by the *p*-value, which stands at 0.376. The correlation section shows that the value of the Pearson correlation between age and openness is -0.151. This is a direct negative correlation, indicating that an increase in one variable will correspond to a decrease in the other variable (Table XV).

Negative correlation between age and organizational norms

The results in Table XVI have shown that the Pearson correlation between age and openness is -0.102. This is a direct negative correlation, indicating that an increase in one variable will correspond to a decrease in the other variable. Therefore, the results indicated that there is a significant impact of age on organizational norms.

Discussion

Comparison between organizational norms and organizational productivity

The present study has evaluated the impact of organizational norms on employee productivity in the higher education sector within UAE. In this regard, a questionnaire was developed to evaluate the ten most significant elements of organizational norms. As discussed earlier, these were performance, teamwork/communication, leadership/supervision, profitability/cost effectivity, colleague/associate relations, customer/client relations, innovativeness/creativity, training/development and candor/ openness. Similar to this, a previous study identified a strong association between the teamwork factor and employee motivation and productivity (Irfan and Lodhi, 2015). This was corroborated by an

Organizational norms and employee productivity

<i>Correlations</i>									
		Openness				Age			
Pearson correlation									
Openness		1.000				-0.151			
Age		-0.151				1.000			
Sig.									
Openness						0.178			
Age		0.178							
<i>n</i>									
Openness		89				89			
Age		89				89			
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	<i>F</i> -change	df1	df2	Sig. <i>F</i> -change
Openness	0.151 ^a	0.049	-0.016	39.3963	0.049	0.814	1	35	0.367
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	35.512	18.676		7.185	0.125	-8.726	47.705		
Age	-9.343	8.618	-0.151	-0.917	0.376	-17.248	9.851		

Table XV. Comparison between age and openness

Notes: ^aPredictors: (constant), age; ^bdependent variable: openness

<i>Correlations</i>									
		Organizational norms				Age			
Pearson correlation									
Organizational norms		1.000				-0.102			
Age		-0.102				1.000			
Sig.									
Organizational norms						0.254			
Age		0.254							
<i>n</i>									
Organizational norms		89				89			
Age		89				89			
<i>Regression analysis</i>									
Model 1	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate	<i>R</i> ² change	<i>F</i> -change	df1	df2	Sig. <i>F</i> -change
Organizational norms	0.200 ^a	0.040	0.006	2.627	0.070	1.616	1	35	0.298
<i>Coefficients</i> ^b									
Model 1	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.	95.0% confidence interval for <i>B</i>			
	<i>B</i>	SE	β			Lower bound	Upper bound		
(Constant)	9.554	20.425		7.983	0.000	9.433	15.567		
Age	-0.315	0.745	-0.102	-4.800	0.298	-4.851	0.604		

Table XVI. Comparison between age and organizational norms

Note: ^aPredictors: (constant), age

additional study conducted by Bani Ismail (2012), where it was suggested that teamwork aids in improving the quality of the product, fosters the presence of trust and camaraderie among the employees engaged in team building, enables a far greater participation of employees in the decision-making process and encourages idea-sharing and team learning. Thereby, it greatly boosts the motivation levels of employees.

The results obtained in the present study were in line with previous studies conducted in this context (Zablah *et al.*, 2016; Hanaysha, 2016a, b; Cording *et al.*, 2014). More specifically, it was seen that a majority of the participants scored highest in the category of customer/client relationship, an association that had not been widely explored by previous studies pertaining to this context. Additionally, the employees demonstrated high scores in the openness variable. Various studies have suggested the strong impact of honesty within workplace interactions and the organizational norms of any firm or industry (de Vries and van Gelder, 2015; Bhatti *et al.*, 2015). In fact, one of the core tenets of workplace ethics is reflected in candor, or honesty. In this context, the role of the leadership within any organization is signified to have a strong impact on influencing employee openness. This was indicated in a study by Yam *et al.* (2018), where it was seen that a leader's sense of humor had a significantly positive effect on employee candor. However, the converse was also presented, greatly increasing the level of comfort between employees and leaders may lead to a violation of the standard norms established by the organization.

The results are supported by Cording *et al.* (2014) providing a positive relation between customer and client leadership, scoring the highest productivity due to positive behaviors. (Nasution *et al.*, 2016; Choi *et al.*, 2014; Top *et al.*, 2015) agreed with the idea that successful leadership styles are characterized through the level of employees' productivity. Furthermore, the implementation of transformational style in leadership provides job satisfaction while enhancing the quality of work. Zeine *et al.* (2014) suggested that dynamic changes internal professional interactions help in fostering the organizational norms and culture. Managers working in line with the set organizational cultures help in productive interaction among employees that significantly affect their performances. Furthermore, Irfan and Lodhi (2015) and Bani Ismail (2012) provide a positive relationship between organizational norms followed by team work and employees productivity. The findings of the study revealed that teamwork plays a significant role in improving the quality of work, while developing a bond of trust among employees. Also, employees engaged in team work foster the process of decision making and provide a sense of motivation to employees (Ahmad and Manzoor 2017). Since academic relations at higher education institutions are usually identified as supervisory and management leadership, the negative behavior of supervisors may develop a negative institutional culture (Zeine *et al.*, 2014).

Similarly, Tansel and Gazioglu (2014) emphasized on the development of functional organizational culture, while illustrating that strong relationships between management and employees are highly important and are related to employee's productivity and motivation. Power-based dynamic and uneven managerial relationships produce a negative effect over employees' performances (Cascio, 2018; Zameer *et al.*, 2014; Lazaroiu, 2015; Kiruja and Mukuru, 2018).

Uddin *et al.* (2013) proposed similar findings in his paper. The results proposed in the study illustrated that it is the culture of an organization that creates an impact on employees' performances. The given findings clearly illustrate that culture is not affected through employees' performances; it is the performance of an employee which is stimulated through healthy organizational culture.

Comparison between personal characteristics and organizational productivity

The present study conducted a comparison between the age of the respondents and 11 other organizational norms. It was found that as the age of employees increased, they

demonstrated higher levels of productivity within the organization. Relatively few studies have encompassed discussions of the close association between age and employee productivity. Nevertheless, a study by Kordbacheh *et al.* (2014) specified that older employees were more likely to demonstrate higher levels of job engagement, which corresponded with higher levels of productivity. Moreover, the study highlighted that employees falling within higher age groups were more likely to demonstrate flexibility at work. It may additionally be deduced from this study that older employees are more likely to have a wider range of work experiences as compared to their younger peers. As found by the present study, there was a significant association between the age of employees and their relationship with colleagues, which had previously been highlighted by Kordbacheh *et al.* (2014) and Lee (2016).

Another study was conducted by Lu *et al.* (2015) focusing on the influence of age diversity in promoting the smooth relationship between employees. The findings of the given study imply that age diversity shares are positively related to organizational relationships, which not only provide a healthy organizational culture but also increase the organization's attractiveness. This diverse workforce increases motivation among employees leading to valuable organizational output.

The findings of a low impact of employees' performance and age are in contradictory to the literature proposed by Kordbacheh *et al.* (2014). According to the study, older employees have provided high levels of productivity and work engagement, indicating a positive relationship between employees' age and productivity. Another study proposed by Sharma (2017) supported similar results that the performance of any employee has no definite impact over his age. The findings of the study in this regard are beneficial to support the findings of the current study. The given hypothesis, however, is invalid in the given framework of the above studies.

Given the results of the study are in line with the study conducted by Wegge *et al.* (2012), according to which, highly efficient team work is possible among employees with similar ages. High level experiences of old aged employees may create hindrances in understanding the behaviors of employees. The study, however, proposed an alternate relationship by providing the impact of age on teamwork. In the light of the above statement, it is significant that the hypothesis proposed in the current study is weaker, providing a low impact of teamwork on age. The findings of the given study are like that provided by Maurer (2001) in his paper. The study provided an inverse relationship between leadership skills and the age of employees. As already stated above, the results in such a situation will be corresponding to that provided in the current study. Lu *et al.* (2015) illustrated similar findings of the study. The increase in employees age has significantly a positive impact over the organizational relationship of employees, providing feasibility to operate every day organizational issues. The results proposed in the current study are supported by Dello Russo *et al.* (2017) in his paper.

Conclusion

The present study has investigated the impact of organizational norms on employee productivity within the higher education sector in UAE. The results concluded that there was a significant relationship between attributes of organizational culture and the overall performance of its employees. Through the proposed results, it is cleared that the productivity of an employee depends on different factors. The first factor includes the positive relationship between clients that provide a high level of professionalism among employees. Next is the role of leadership in increasing employees' productivity. An effective leadership provides motivation and develops a sense of loyalty among employees. Dynamism in leadership fosters the productivity and performances of the employee, due to the well-developed organizational culture.

A significant importance is provided to the role of teamwork in increasing the quality of work. Organizations that promote the idea of knowledge sharing are important, as it enhances the abilities of employees. Productive interaction among employees is important to cater organizational difficulties. Behaviors and attitudes of different employees are important, for instance negative behavior of supervisors may affect the organizational environment resulting in a low level of productivity in employees.

Other variables include personal pride, employees' performances, teamwork, leadership profitability and customer relationship on age. However, the given findings illustrated that the increase in employees' age decreases the value of personal pride in them. Old aged employees are more productive in comparison to young employees, due to a high level of experience and knowledge, while employee's performance has no definite impact on employees' age. To perform efficiently, team work is considered as the mandatory variable of successful organizational culture, providing no significant impact over employees' age, whereas employees working with similar age groups provide a high level of productivity in work operations. Other than this, the increase in employees' age provides a negative impact on employee's leadership skills. Another significant relationship was provided between employees' age and profitability. The increase in one variable increases the value of another variable. Relationship between employees' age and colleague relations is provided valuable concern in this study. However, the findings of this study illustrated that both variables are positively correlated with each other. Other variables include the impact of age on customer relationship, innovativeness and development that is seeming of low levels. Finally, the importance of organizational norms is considerable as it produces a positive impact over employees' productivity at greater levels.

The results showed a positive association between the investigated organizational norms and employee productivity. The study has clearly explained how beliefs, gestures, norms and other relative features of organizational culture affect organizational performance. There is a significant impact of positive and negative culture on the employees and organizational performance.

Study implications

Depending upon the important conclusions proposed in this study, the study provides significant contributions to the existing literature. Besides this, the study is the first to provide significant attention to the relationship between organizational norms and employee productivity in the higher education field, specifically in the region of UAE. The examination proposed in the study related to different behaviors and attitudes of employees working in higher education institutions is significant in providing important knowledge to policy makers. Finally, higher education institutions operating in different parts of the world can analyze important information to improve the existing organizational culture.

The results of this study have significantly contributed toward organizational studies as it provides significant quantitative perception to the readers regarding organizational culture and performance. Moreover, the results of this study have shown that productivity can be improved by changing the organizational culture. The results were significant as it contributes to the field of management research in the context. It is expected that adopting the student-centered and competency-based reforms to medical education would have a positive impact on medical student satisfaction and their team-building skills. This has also indicated the need of training programs in leadership skills for educators, students and individuals assigned to supervisory roles in higher education institutions to raise more considerate educators.

Study limitations

However, the results were also limited because of quantitative analysis. Additionally, due to the lengthiness of the approval process, it took a longer period of time to gather data from the institutions. Furthermore, permission could not be received for publishing the name of the investigated institution. Moreover, the desired personnel in higher education institutions

could not be contacted speedily, due to which the data gathering process was affected. The study has recommended that initially an individual should internalize himself/herself with the organization's culture to identify their coping strategies. The employees need to be notified and made to learn the modification of the old culture because it affects their performance in cases, where organizational culture has to be changed. Future studies need to utilize fewer items in the questionnaire and provide a longer time for responses to gather the desired data.

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Further reading

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Factors predicting job satisfaction among faculty members of a Saudi higher education institution

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Abstract

Purpose – The purpose of this paper is to evaluate the level of job satisfaction among faculty members of the health sciences program at a Saudi higher education institution; and predict the influence of various factors on overall job satisfaction. However, this study is quite different since it intended to evaluate the level of job satisfaction of faculty members using a self-structured questionnaire and ascertained the various factors influencing the overall job satisfaction of Saudi academics.

Design/methodology/approach – An exploratory study design was adopted and Academic Job Satisfaction (AJS) survey was administered to 943 faculty members of the health sciences program through an online system. A total of 850 faculty members responded to 47 items and one global rating item (overall job satisfaction) using a five-point ordinal scale.

Findings – The level of job satisfaction of health sciences' faculty members on all dimensions of AJS is observed to be high (> 3.5) except salary, which is shown as medium (2.5–3.49). Regression analysis indicates the factors other than Imam Abdulrahman Bin Faisal University (IAU) administrative policies and interpersonal relationships are significant predictors of overall job satisfaction; and salary is the most significant predictor of overall job satisfaction among health sciences' faculty members.

Originality/value – This study adds a value to the existing literature by exploring the factors influencing job satisfaction of health sciences' faculty members working in Saudi Universities. This would aid policy makers to focus on these factors, thereby improve and maintain job satisfaction among healthcare academics.

Keywords Faculty members, Higher education institutions, Quality of higher education, Health sciences, Academic job satisfaction

Paper type Research paper

Introduction

Job satisfaction is defined as the emotional status and attitude of employees toward their work (Greenberg and Baron, 2011). Employees are sensitive to several aspects of their jobs, including the nature of work (NoW), co-workers, managers, and pay (George and Jones, 2008). In prior research, various theories were used to explain employee job satisfaction. Among such theories, a prominent one is Maslow's (1943) theory of Motivational Hierarchy of Needs, which identified five levels of needs, namely physical, safety, love/belongingness, self-esteem and self-actualization. Herzberg's *et al.* (1959) dual or two-factor theory has also become one of the most prominent theories to describe motivation and job satisfaction. This theory explains that employee's job satisfaction is affected by two factors, namely, motivators and hygiene factors. Motivators involve factors related to the job, such as prospects for advancement, achievement, recognition, and responsibility. Hygiene factors are extrinsic to the job, and include interpersonal relationships (IR), salary, supervision and organizational policy. Many studies have also



addressed the factors influencing the job satisfaction among employees (Dhanapal *et al.*, 2013; Parvin and Kabir, 2011; Sageer *et al.*, 2012).

Job satisfaction has come to be considered as a major issue in educational institutions since it is closely related to the job performance and turnover of employees (Agnihotri, 2013). In addition, it also influences students' satisfaction and their learning process (Machado-Taylor *et al.*, 2010). The faculty members of higher education institutions (HEIs) have a strong impact on the success of students and in the creation of a productive workforce for the economy. The job-related dissatisfaction might lead academics to be less productive and less dedicated toward institutions (Ahsan *et al.*, 2009).

What are the factors affecting job satisfaction among faculty members? In a study conducted by Klassen *et al.* (2010), promotion, pay, supervisory support, team cohesion and job requirements were identified as the primary factors of job satisfaction among teachers. Maertz and Griffeth (2004) listed competitive salary, job autonomy, good supervision, and IR, training and development opportunities, better working conditions (WC) and job security (JS) as the motivational factors for job satisfaction. Ssesanga and Garrett (2005) identified teaching requirements, research, remuneration, supervision, opportunities for promotion, co-workers' behavior, WC, governance and the job itself as determinants of faculty job satisfaction.

As academic job satisfaction (AJS) influences job performance, student achievement and general satisfaction, HEIs in Saudi Arabia pay much attention to the evaluation of job satisfaction among faculty members. To ensure quality, Imam Abdulrahman Bin Faisal University (IAU) (formerly the University of Dammam, a public university, has also focused on the evaluation of AJS among faculty members. It is a well-regarded university located in the Eastern province of Kingdom of Saudi Arabia. It offers various undergraduate and graduate degree programs under four clusters, namely, Health, Engineering, Science and Management and Arts and Education. IAU employs both Saudi nationals as well as expatriates from various countries who are termed as "Non-Saudis." Here, our study targeted the faculty members of the health sciences programs at IAU since these academics play a vital role in training physicians, nurses, pharmacists and other healthcare professionals to address the health needs of the community. Students trained by these academics would hold an effective role in the health system of a nation (Mansour and Vahidshahi, 2008). Revealing the factors associated with faculty's job satisfaction is essential since a high-quality faculty is the keystone of an effective higher education system (Brittler and Thabet, 2015).

Various researchers have studied the job satisfaction of faculty members in HEIs across the globe (Okpara *et al.*, 2005; Hesli and Lee, 2013; Loquias and Sana, 2013; Machado-Taylor *et al.*, 2014; Tai and Chuang, 2014; Mirzaei-Alavijeh *et al.*, 2018). Previous studies revealed the factors affecting the job satisfaction of faculty members of HEIs (Alshetri, 2013; Al Jazairy *et al.*, 2014; Al-Hinai, 2013; Brittler and Thabet, 2015; Masum *et al.*, 2015). It is noted that some studies previously have evaluated the job satisfaction among faculty members in HEIs in Saudi Arabia (Al Rubaish *et al.*, 2009; Al-Smadi and Qblan, 2015; Brittler and Thabet, 2015; El-Zoubi and Wirba, 2017). In the Saudi Arabian context, Al Rubaish *et al.* (2009) explored job satisfaction among the academic staff of King Faisal University-Dammam using a fully structured job satisfaction questionnaire. The results showed that academic staff were fairly satisfied with their jobs and varied in their job satisfaction across job domains and demographic characteristics. Subsequently, Al Rubaish *et al.* (2011) developed and validated a self-administered academic job satisfaction questionnaire (AJSQ) for Saudi faculty members. The questionnaire included 8 domains with 46 items. It is concluded that the AJSQ is noteworthy for the evaluation of job satisfaction in an academic environment. Alshetri (2013) revealed the factors affecting overall job satisfaction and employees' intentions to stay only at public research and development (R&D) centers in Saudi Arabia. Likewise, Al Jazairy *et al.* (2014) analyzed the factors affecting job satisfaction and their correlation with educational standards among dental assistants working in various dental schools, clinics, polyclinics, private and public hospitals in

Saudi Arabia. Furthermore, Al-Smadi and Qblan (2015) evaluated the level of job satisfaction of faculty members at Najran University and identified the impact of variables such as gender, teaching experience and college on their job satisfaction. A recent study by Britiller and Thabet (2015) described the predictors of level of job satisfaction of female faculty members of health sciences in Saudi Arabia using the Minnesota satisfaction questionnaire (MSQ). It also explored the relationship between the faculty's level of job satisfaction and their demographic characteristics. Likewise, El-Zoubi and Wirba (2017) examined the job satisfaction of academic staff in various academic institutions of the Eastern province of Saudi Arabia using a job satisfaction questionnaire developed by Spector. Currently in Saudi Arabia, National Center for Academic Accreditation and Assessment (NCAAA) is responsible for granting and monitoring the academic accreditation processes of HEIs. It is a mandatory for HEIs to assess their performance by conducting various evaluations by students and faculty members in order to meet its requirements for academic accreditation. Therefore, the present study developed a self-structured questionnaire to capture various factors influencing AJS among Saudi academicians and to examine how the existing academic atmosphere could predict job satisfaction in Saudi higher education. By this, this study also provides a uniform AJS survey tool for capturing AJS of health science faculty across Saudi universities. Accordingly, this study was conducted with two objectives: to evaluate the level of job satisfaction among faculty members of the health sciences program at IAU, Saudi Arabia in general, and to study the influence of various factors on overall job satisfaction.

Methodology

In this study, an exploratory study design was adopted and the faculty members of the health sciences programs of IAU were considered as the population of this study. The term "faculty" included professors, associate professors, assistant professors, lecturers, demonstrators and others directly involved in teaching. Here, the colleges covered under health sciences programs include college of medicine, college of dentistry, college of nursing, and college of applied medical sciences. To capture the level of job satisfaction of faculty members, the authors developed a self-structured content-validated questionnaire titled the AJS questionnaire, which is a modified version of the instrument developed by Al Rubaish *et al.* (2011). The questionnaire was administered to all health sciences' faculty members ($n = 943$) using an online application "UDQuest." The ethical considerations were adhered to, informed consent was obtained, and confidentiality and anonymity were assured before collecting the data from the participants. A stipulated time-frame was provided to them to respond. 850 completed responses were received with the response rate measured as 90 percent (out of 943).

The questionnaire consisted of 11 dimensions with a total of 46 items and one global rating item (overall job satisfaction). The dimensions used in AJS were: IAU administrative policies (IAUAP), supervision (SUP), IR, recognition and reward (RR), JS, NoW, professional responsibilities (PR), professional achievements (PA), professional advancement (PAD), and salary (SA). In this study, these dimensions were designated as factors influencing job satisfaction among faculty members at IAU. Each item has a Likert-type scale and the response was rated using a five-point ordinal scale, designated as Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). Statistical analysis was done using SPSS version 20. The evaluation of the internal consistency of the questionnaire was done using the Cronbach α reliability test. Descriptive statistics were used for demographic data and the level of job satisfaction among faculty members. An independent *t*-test was used to compare the overall job satisfaction of faculty members with respect to gender and nationality. Pearson's correlation was applied to determine the relationship between the overall job satisfaction and dimensions of AJS. Furthermore, the influence of 11 dimensions of AJS (independent variables) on overall job satisfaction of faculty members (dependent variable) was assessed using multiple regression analysis.

Results

The demographics show that 63.1 percent were female and 36.9 percent male. With respect to nationality, 60.4 percent were Saudis and 39.6 percent were Non-Saudis. It was found that a high percentage of faculty members were between 31 and 40 years and hold a PhD equivalent degree. About 44.5 percent of the respondents observed were assistant professors (Table I). Table II shows the responses on the questions concerned with attitudes of faculty members

Category	Frequency	Percentage
<i>Age</i>		
21–30	126	14.8
31–40	308	36.2
41–50	280	32.9
Above 50	136	16.0
<i>Gender</i>		
Male	314	36.9
Female	536	63.1
<i>Nationality</i>		
Saudi	513	60.4
Non-Saudi	337	39.6
<i>Highest qualification</i>		
Bachelor	67	7.9
Postgraduate diploma	02	0.2
Master's degree	242	28.5
PhD equivalent	400	47.1
Post doctorate	139	16.4
<i>Current position</i>		
Demonstrator	54	6.4
Lecturer	257	30.2
Assistant Professor	378	44.5
Associate Professor	111	13.1
Professor	32	3.8
Others	18	2.1

Table I.
Demographic data

Variables	Strongly disagree (%)	Disagree (%)	True sometimes (%)	Agree (%)	Strongly agree (%)	Total (%)
UDAP	5	7.1	24.4	40.6	27.5	100
SUP	3.4	5.4	13.6	32.0	45.5	100
IR	0	3.5	12.2	41.3	42.9	100
RR	3.3	4.6	17.6	33.6	40.8	100
WC	1.4	7.3	25.1	39.9	26.4	100
JS	0.6	4.4	16.6	43.6	34.8	100
NoW	0.6	6.4	20.0	40.1	33.2	100
PR	0.1	1.3	7.9	41.8	48.9	100
PA	0.9	6.9	24.9	34.2	32.9	100
PAD	2.5	8.1	20.2	36.1	33.1	100
SA	7.1	19.9	29.2	29.6	14.2	100
OJS	1.3	2.8	15.1	36.1	44.7	100

Table II.
Percentage of respondents toward AJS variables

Notes: IAUAP, IAU administrative policies; SUP, supervision; IR, interpersonal relationships; RR, recognition and rewards; WC, working conditions; JS, job security; NoW, nature of work; PR, professional responsibilities; PA, professional achievements; PAD, professional advancement; and SA, salary

toward AJS dimensions. More than 40 percent of respondents reported “Strongly Agree” on dimensions such as supervision, IR, RR, PR, and overall job satisfaction. It was also observed that more than 5 percent of respondents reported “Strongly Disagree” toward salary and IAU administrative policies. Less than 1 percent of respondents reported “Strongly Disagree” with job security, PR, NoW, and PA. No respondents have reported “Strongly Disagree” toward IR between faculty members (Table II).

Further, the Cronbach’s α reliability test was used to find out the internal consistency of the instrument used for data collection. The value for Cronbach’s α coefficient normally ranges between 0.00 and 1.00. The overall α coefficient value 0.96 showed that the variables measured the concept of the questionnaire can be rated as “excellent” (George and Mallery, 2003). Therefore, it is inferred that the questionnaire is reliable one (Table III). While testing the questionnaire using factor analysis with the rotation varimax method, the total variance explained the sum of squared loadings as 67.70 percent. Factor analysis extracted 11 factors, which conjointly explained 67.70 percent of the variance in job satisfaction of faculty members of health sciences program at IAU.

In this study, the level of job satisfaction was considered as belonging to 3 categories based on the mean values of each dimension of AJS, i.e., high (more than 3.5), medium (2.5–3.49), low (less than 2.49) (Bataineh, 2014). The level of job satisfaction among health sciences’ faculty members with respect to all dimensions of AJS except salary was found to be high (mean value more than 3.5). However, the level of satisfaction with respect to salary is found to be medium (mean value = 3.24) among faculty members (Table IV).

Furthermore, an independent “*t*” test was applied to compare the overall job satisfaction of faculty members of the health sciences programs of IAU with respect to gender and nationality. In case of gender, the results showed that there is no significant difference in overall job satisfaction between male and female faculty members. On the contrary, a significant difference is observed in overall job satisfaction between Saudi and Non-Saudi faculty members. Specifically, Saudi faculty members are highly satisfied than non-Saudi faculty members of the health sciences programs of IAU (Table V).

Through Pearson correlation, it was inferred that dimensions such as IAU administrative policies, RR, “nature of work,” PA have a strong and positive correlation with overall job satisfaction ($p < 0.01$). Further, supervision, IR, WC, job security, PR, PAD and salary demonstrated a moderate and positive correlation with overall job

Dimensions	Cronbach's α	No. of items
IAUAP	0.83	04
SUP	0.93	03
IR	0.85	04
RR	0.91	02
WC	0.82	04
JS	0.70	03
NoW	0.79	04
PR	0.71	03
PA	0.85	04
PAD	0.74	02
SA	0.83	03
OJS	0.96	01

Notes: IAUAP, IAU administrative policies; SUP, supervision; IR, interpersonal relationships; RR, recognition and rewards; WC, working conditions; JS, job security; NoW, nature of work; PR, professional responsibilities; PA, professional achievements; PAD, professional advancement; and SA, salary

Table III.
Reliability statistics

Table IV.
Level of job satisfaction among faculty members at IAU

Variables	Mean	SD	Level
IAUAP	3.88	0.911	High
SUP	4.11	1.051	High
IR	4.24	0.799	High
RR	4.04	1.032	High
WC	3.82	0.950	High
JS	4.08	0.858	High
NoW	3.99	0.911	High
PR	4.38	0.697	High
PA	3.91	0.967	High
PAD	3.89	1.034	High
SA	3.24	1.136	Medium
OJS	4.20	0.887	High

Notes: IAUAP, IAU administrative policies; SUP, supervision; IR, interpersonal relationships; RR, recognition and rewards; WC, working conditions; JS, job security; NoW, nature of work; PR, professional responsibilities; PA, professional achievements; PAD, professional advancement; and SA, salary

Category	Mean	SD	t-value	p-value
<i>Gender</i>				
Male	4.27	0.882	1.670	0.095
Female	4.16	0.889		
<i>Nationality</i>				
Saudi	4.25	0.847	1.883	0.042*
Non-Saudi	4.13	0.942		

Table V.
Comparison of overall job satisfaction among gender and nationality using independent t-test

Note: *Significant at 0.05 level

satisfaction ($p < 0.01$). Thus, the results indicated that an increase in score on dimensions of AJS would increase the overall job satisfaction of faculty members of health sciences (Table VI).

In this study, the regression model is found to be significant ($p < 0.05$), and these 11 dimensions explained 58.1 percent of the total variation in overall job satisfaction among faculty members. The value of R (0.762) indicated a strong and positive relationship between 11 dimensions and overall job satisfaction (Table VII). The Table VIII shows that the t-value of three dimensions such as IAU administrative policies and IR are found to be non-significant ($p > 0.05$), whereas the other remaining nine dimensions are found to be significant ($p < 0.05$). This indicates that all dimensions of AJS except IAU administrative policies and IR are significant predictors of overall job satisfaction among health sciences' faculty members. From the standardized coefficients, the most important predictor is observed as "Salary", followed by "Recognition and Reward", "Nature of work", "Professional responsibilities" and "Job security."

Discussion

To achieve the study objectives, the authors administered AJS questionnaire among health sciences' faculty members through UDQuest. The dimensions of AJS include IAU administrative policies, supervision, IR, RR, WC, job security, nature of work, PR, PA, PAD and salary. Our study, though, was conducted at a public university and differs from the previous studies conducted in Saudi Arabian context with following aspects: this present study used a self-structured questionnaire instead of the MSQ and Spector's job satisfaction questionnaire; explored the difference in overall job satisfaction between both gender and

Table VI.
Correlation between
AJS variables and
overall job satisfaction

Variables	IAUAP	SUP	IR	RR	WC	JS	MWI	PR	PA	PAD	SA	OJS
IAUAP	1											
SUP	0.574**	1										
IR	0.589**	0.602**	1									
RR	0.619**	0.427**	0.543**	1								
WC	0.636**	0.368**	0.589**	0.507**	1							
JS	0.638**	0.454**	0.528**	0.602**	0.512**	1						
NoW	0.666**	0.527**	0.592**	0.578**	0.599**	0.614**	1					
PR	0.583**	0.452**	0.559**	0.430**	0.455**	0.518**	0.569**	1				
PA	0.685**	0.544**	0.606**	0.640**	0.550**	0.603**	0.709**	0.582**	1			
PAD	0.582**	0.394**	0.476**	0.600**	0.468**	0.542**	0.575**	0.467**	0.708**	1		
SA	0.541**	0.287**	0.417**	0.516**	0.500**	0.471**	0.513**	0.363**	0.551**	0.517**	1	0.586**
OJS	0.617**	0.469**	0.524**	0.606**	0.514**	0.587**	0.627**	0.523**	0.648**	0.577**	0.586**	1

Notes: IAUAP, IAU administrative policies; SUP, supervision; IR, interpersonal relationships; RR, recognition and rewards; WC, working conditions; JS, job security; NoW, nature of work; PR, professional responsibilities; PA, professional achievements; PAD, professional advancement; and SA, salary. **Correlation is significant at the 0.01 level (two-tailed)

nationality and described the level of satisfaction of faculty members with respect to categories used by Bataineh (2014). In addition, the relationship between the dimensions of AJS and overall job satisfaction was identified. It is noteworthy to mention that this study focused on the influence of dimensions of AJS on overall job satisfaction of health sciences' faculty members and did not address the variations in job satisfaction owed to demographic characteristics. Further research is warranted to address this issue.

While analyzing the percentage of respondents' ratings on the dimensions of AJS, it was found that about 45.5 percent of faculty members were satisfied with supervision, which is lower than the findings reported by Mahdi *et al.* (2014), but it is considerably high when compared to the results observed by El-Zoubi and Wirba (2017) among academic staff in Saudi universities. It was also observed that the quality of supervision has significant impact on job satisfaction and commitment of faculty (Malik *et al.*, 2010). About 43.8 percent of faculty members showed a positive response toward salary (i.e. strongly agree (14.2 percent) and agree (29.6 percent)), which is consistent with the results of a previous study that demonstrated 61 percent of respondents were satisfied with the pay, salary and benefits packages (Al-Hinai, 2013). Contrary to our findings, a study by Schulze (2006) reported only 11.7 percent of academics were satisfied with salary paid by their institution.

A study by Al-Smadi and Qblan (2015) reported a moderate degree of overall job satisfaction among faculty members at Najran university of Saudi Arabia. In contrast, our study reported a high level of overall job satisfaction was observed among faculty members of the health sciences programs at IAU. With respect to the dimensions of AJS, these health sciences' faculty members reported a high level of satisfaction toward all dimensions of AJS except for salary. Here, the level of job satisfaction among health sciences' faculty members at IAU toward salary was observed as medium, which is in accord with the findings of Adeel *et al.* (2011) and Al-Smadi and Qblan (2015). This may be due to the regulations of

Model	R	R ²	Adjusted R ²	SE of estimation	F-value
Overall job satisfaction	0.762	0.581	0.575	0.578	105.567* (<i>p</i> < 0.05)

Note: *Significant at 0.05 level

Table VII.
Multiple regression analysis

Dimensions	Unstandardized coefficients		Standardized coefficients		Collinearity statistics		
	β	SE	β	<i>t</i> -value	<i>p</i> -value	Tolerance	VIF
Constant	0.593	0.138		4.301	0.000*		
IAUAP	0.034	0.038	0.035	0.908	0.364	0.330	3.028
SUP	0.066	0.026	0.079	2.558	0.011*	0.531	1.883
IR	-0.02	0.037	-0.02	-0.056	0.955	0.453	2.208
RR	0.125	0.029	0.145	4.363	0.000*	0.451	2.216
WC	0.029	0.012	0.024	2.613	0.037*	0.311	3.468
JS	0.106	0.034	0.102	3.124	0.002*	0.469	2.134
NoW	0.119	0.036	0.122	3.318	0.001*	0.371	2.693
PR	0.133	0.039	0.105	3.425	0.001*	0.537	1.862
PA	0.087	0.038	0.095	2.325	0.020*	0.298	3.358
PAD	0.063	0.029	0.074	2.197	0.028*	0.442	2.260
SA	0.173	0.023	0.222	7.548	0.000*	0.580	1.724

Notes: IAUAP, IAU administrative policies; SUP, supervision; IR, interpersonal relationships; RR, recognition and rewards; WC, working conditions; JS, job security; NoW, nature of work; PR, professional responsibilities; PA, professional achievements; PAD, professional advancement; and SA, salary. *Significant at 0.05 level

Table VIII.
Prediction of overall job satisfaction by various job factors

Ministry of Education, Saudi Arabia relating to salary ladder, which depends on the scientific qualification, academic rank and years of experience.

With respect to gender, there is no significant difference between male and female faculty members of the health sciences programs at IAU. This might be due to the uniform regulations adopted by IAU in terms of proper tenure, pay, benefits and job advancement for faculty members as per ministry norms. Contrary to our findings, a previous study done by Al-Smadi and Qblan (2015) reported a significant difference in gender regarding overall job satisfaction of faculty members at a Saudi university.

Moreover, the present study showed a significant difference in overall job satisfaction among health sciences' faculty members at IAU with respect to nationality, i.e. Saudi faculty are more satisfied than Non-Saudi faculty where 60 percent of samples of this present study are Saudi nationals. Our finding is consistent with the results of Praveen (2015) that explained as the nationality has a significant effect on job satisfaction where Saudi faculty are highly satisfied with personal growth, salary, professional support than Non-Saudi. Further, the possible reason for the observed difference was described as Saudi nationals are job contented and receive full support for monetary and non-monetary level from the government organizations. Contrary to this, Al Rubaish *et al.* (2009) reported that the overall job satisfaction was significantly lower among Saudi academics when compared to expatriates at a Saudi university. Unlike our study, the findings of previous study done by Al Rubaish *et al.* (2009) focused on all the programs offered in a public university.

Further, all dimensions of AJS are positively correlated with overall job satisfaction, which is consistent with the findings of Castillo and Cano (2004), who reported a positive correlation between job motivation factors such as achievement, advancement, recognition, responsibility, work itself and overall job satisfaction among faculty members. Also, it was observed that job hygiene factors such as relationships, policy and administration, salary, supervision and work conditions are positively related to overall job satisfaction. As IAU is a public HEI, a positive relationship is found between JSand overall job satisfaction among health sciences' faculty members, and this is in line with the finding of Khalid and Irshad (2010) as well as Khalid *et al.* (2012), who indicated that employees in the public sector are more satisfied with their JSas compared to the private sector. Mustapha and Zakaria (2013) found a positive significant relationship between promotion opportunity and job satisfaction among lecturers at public universities in Malaysia, which is consistent with our results regarding the relationship between the PAD and overall job satisfaction.

This study reveals that all the dimensions of AJS except IAUAP and IR are significant predictors of overall job satisfaction among faculty members of health sciences programs at IAU. Supervision was observed as one of the significant factors influencing job satisfaction among health sciences' faculty, which is consistent with the findings of the study done by Boeve (2007) and Malik *et al.* (2010). Previous studies also demonstrated that those supervisors maintain a strong IR with their colleagues' results in enhancement of employees' job satisfaction at work place (Alpern *et al.*, 2013; Boerebach *et al.*, 2013; Jack *et al.*, 2013). On the contrary, few studies indicate that supervisory style is not a strong predictor of employee's job satisfaction (Ashraf and Joarder, 2010; Lien, 2017).

In addition, this study observed the PR, PA and PAD as significant predictors of job satisfaction of health sciences' faculty members at IAU. These findings are in accord with the results of Brittiller and Thabet (2015) who found that the intrinsic factors focusing on the meaningful use of time at work, collegial relationship, work values, work independence and chances and opportunities for professional growth are predictors of level of job satisfaction among faculty members of Al Ghad international colleges of health sciences, Saudi Arabia. In addition, Jawabri (2017) revealed that job promotion has a significant influence on job satisfaction among academic staff, whereas, job responsibilities has no significant effect on job satisfaction.

The next factor explored in this study was the “nature of work” to ascertain whether it is the significant predictor for employee job satisfaction. Our findings suggest that NoW has a significant influence on job satisfaction of faculty members of health sciences and such a finding is in line with the earliest study done by Boeve (2007) and Malik *et al.* (2010). It was found that high workloads among those academic staff who involved in teaching and research experienced the job stress and low job satisfaction (Winefield and Jarrett, 2001). This present study witnessed that the job stress is more among the lecturers and assistant professors when compared with those working as professors at IAU. This might be attributed to increase in teaching load among those who are working at the lower academic grades such as “lecturers” and “assistant professors.” Moreover, the teaching load and criteria for promotion of faculty members are standardized across all Saudi universities as stipulated by the Ministry of Education (Higher Education Council, 1996). In IAU, equal opportunities are provided to the entire faculty to attend training and development programs. To facilitate that, the Deanship of Academic Development is in place at IAU to expose the entire faculty to training and development programs as per the needs.

With respect to WC, this study found that WC is a significant factor influencing the job satisfaction of faculty members in health sciences program, which is consistent with the results of Tai and Chuang (2014) and Masum *et al.* (2015). Further, the healthy working environment would enhance job satisfaction by reducing job stress (Ashraf and Joarder, 2010; Joarder and Sharif, 2011; Schmalenberg and Kramer, 2008). It was found that poor work environment, inadequate welfare facilities, poor job security, managerial issues, low pay and lack of promotion opportunities have a negative impact on faculty of medical sciences, which lead to job stress, job dissatisfaction and poor job performance (Sajjadi *et al.*, 2011).

Furthermore, reward and recognition are provided in the form of monetary and non-monetary benefits have a significant influence on job satisfaction and employees’ motivation (Zeb *et al.*, 2015). This study also found that RR as one of the factors influencing the health sciences’ faculty job satisfaction and is validated by the findings of Lien (2017). This may be due to the several benefits available to Saudi academics in the form of attractive compensation, free housing, educational allowance to dependent children, transportation allowance and end of service benefits. At IAU, scientific publication rewards are provided to those faculty members who publish researches in classified journals. Also, faculty members are recognized with job advancement according to the uniform regulations laid by the Ministry of Education of Saudi Arabia.

In the higher education sector, JS gain more attention since it has a negative impact on job satisfaction among faculty members. It was observed as one of the significant contributors for job satisfaction of academics (Masum *et al.*, 2015), which is consistent with our findings. In our study, majority of health sciences’ faculty members are satisfied with JS since they are provided with proper tenure, pay, benefits and job advancement as per ministry norms.

Subsequently, our study reveals that salary is the most important predictor of overall job satisfaction among health sciences’ faculty members, which is validated by earlier studies of Noordin and Jusoff (2009); Masum *et al.* (2015); and Britiller and Thabet (2015). From Herzberg’s point of view, salary is considered as a job dissatisfaction element. It is considered as one of the most important factors that affect job satisfaction (Ahmadi and Keshavarzi, 2012). However, Tai and Chuang (2014) reported that salary is not a significant predictor of overall job satisfaction of public university staff in Taiwan. Our finding is contrary to the findings of Tai and Chuang (2014) since it focuses only health sciences faculty, where Tai and Chuang’s study covers entire university faculty irrespective of specialty.

Lastly, this study found that IAUAP and IR are not the significant predictors of overall job satisfaction of faculty members, which is inconsistent with the findings of Hagos and Abrha (2015). With respect to the IAU administrative policies, policy handbook, policies, and job description manual are formulated by the higher administrative officials i.e. President,

Vice-President, Dean, and Vice Dean of University, faculty members are directed to follow or implement the procedures prescribed in the manual or handbook. Even though, the faculty members are highly satisfied with IAUAP and IR, their overall job satisfaction is not predicted by these factors and further research is warranted to explore the reasons.

Although the present study is exploratory in nature, the authors chose a single HEI in an attempt keeping the following two characteristics of Saudi higher education, namely, that IAU is a governmental university run by the Ministry of Education, Saudi Arabia, and is administered by the same uniform regulations that apply to all Saudi universities in respect of the provision of remuneration and other benefits to faculty members. Further, IAU offers health sciences programs in all specialties, hence employing faculty from different academic backgrounds. Their participation in this study provides a fair sampling of health sciences' faculty members at universities in Saudi Arabia. It is therefore expected that this study would provide a policy perspective for higher education administrators to understand the factors generally influencing job satisfaction of faculty members employed at health sciences colleges in universities across Saudi Arabia. This study delivers a new content validated questionnaire tool to assess the AJS of academics at Saudi higher education environment.

Conclusion

This study adds a value to the existing literature by bringing about the factors influencing job satisfaction of health sciences' faculty members working in Saudi Universities. From the findings, it is concluded that the level of job satisfaction of faculty members of health sciences programs at IAU for "salary" is medium while it is high on the remaining factors explored. It is also noted that "IAU administrative policies," "recognition and reward," "nature of work" and "professional achievements" showed a strong and positive relationship with overall job satisfaction, whereas other factors showed a moderately positive relationship. Factors other than IAUAP and IR are significant predictors of overall job satisfaction; and salary is found to be the most significant predictor of overall job satisfaction among health sciences faculty members. Therefore, policy makers should devise appropriate strategies to implement the uniform rules and regulations laid by the Ministry of Education in terms of pay, benefits, tenure and job advancement; workload standardization; enhancement of PR of faculty members; ensuring a good working environment; provision of rewards and recognition with appropriate career advancement; creating the awareness of administrative policies among faculty members and; promoting supervisory support & IR among co-workers. By means of doing so; the HEIs can overcome all those factors affecting the job satisfaction and it will lead to the improvement of productivity and performance of faculty members in higher education.

Limitations and recommendations

This study is limited to a single public university and only the selected demographic variables are expressed as percentages. Moreover, the difference in overall job satisfaction with respect to gender and nationality are addressed. In future research, the impact of demographic variables such as age, gender, nationality, highest qualification, current rank and work experience on overall job satisfaction as well as the relationship between demographic variables and overall job satisfaction can be studied. Further, the differences between other demographic variables such as highest qualification, current rank and work experience in terms of overall job satisfaction among faculty members can be uncovered. The job satisfaction differences of faculty belonging to different university departments in Saudi public universities can also be revealed. A qualitative study can be conducted in the form of interviews with Saudi faculty members to reveal their influence on public policy adapted in higher education environment. More specifically, the future work should focus on comparing the job satisfaction of health sciences faculty members across different

Saudi universities. Such study will give a policy-oriented clue for university administrators to implement uniform regulations which will further enhance job satisfaction among the academic community.

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Knowledge sharing in higher education institutes

An empirical investigation of individual characteristics

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Abstract

Purpose – The purpose of this paper is to investigate the relationship between individual characteristics and knowledge sharing (KS) in higher education institutes (HEIs) of Pakistan.

Design/methodology/approach – The study used a quantitative research methodology. The empirical data consisted of 370 responses from the academic staff of six HEIs of Pakistan.

Findings – The findings revealed a significant impact of dispositional factors on KS. More precisely, extroversion, openness to experience, agreeableness, emotional intelligence and religiosity were positively associated with KS, while neuroticism was found to be negatively associated with KS.

Practical implications – This micro-level model of KS has some potential implications for the decision makers in the context of HEIs. To enhance the KS in HEIs, the decision makers should take the findings of this study into consideration while hiring the academicians in the universities. The decision makers should give priority to the potential candidates who have a higher level of extroversion, openness and agreeableness. Further, while making hiring and other job-related strategies, religiosity and emotional intelligence of the potential candidates should not be ignored.

Originality/value – The paper tested a micro-level model of KS in HEIs and contributed to the body of knowledge by jointly investigating the relationship between religiosity, emotional intelligence, personality traits and KS. To the best of researchers' knowledge, no study has been conducted, so far, which tested these variables jointly. Thus, the present research filled this knowledge gap.

Keywords Emotional intelligence, Personality traits, Knowledge sharing, Religiosity, Five-factor model of personality

Paper type Research paper

1. Introduction

From the last few decades, knowledge management (KM) and its process have gained the attention of the practitioners and academicians. Many researchers suggested that KM and its process should be the central aim of human resource development (Gourlay, 2001).

Knowledge sharing (KS) has been recognized as a vital and significant process as well as a useful tool for KM (Blankenship and Ruona, 2009; Yeşil and Dereli, 2013).

Study of the literature showed different trends in KS, ranging from professional groups and nonprofessional groups in private and public organisations. Some studies' focus covered accountant (Phang and Foong, 2010), engineers (Zhen *et al.*, 2011), managers (Tangaraja *et al.*, 2015) medical practitioners (Razzaque *et al.*, 2013), information technology (IT) personnel (Teh and Sun, 2012), employees in hotel industry (Yang, 2007), oil industry employees (Tohidinia and Mosakhani, 2010), employees from construction industry (Zhang and Fai, 2012) students of postgraduate studies (Isika *et al.*, 2013) and teachers (Bibi and Ali, 2017; Chen and Wang, 2011), to name few. However, the focus of studies in public universities is relatively low as



compared to the corporate sector, especially in the Pakistani context. Universities are a hub of knowledge and play a very vital role in exploring knowledge with the help of research and distribute knowledge by publications of students' efforts and teachers' research findings. Universities also work in collaboration with different businesses, including entrepreneurial, social and cultural enterprises by giving them innovative ideas, support their R&D through their research and design training sessions for their employees.

Considering the present situation, it is quite rationalised to expect that the higher education institutes (HEIs) would adopt a proactive perspective for the nourishment of their strategies to manage their knowledge, and it is reasonable to expect that they would have a very fine and well-honed underpinning about the management and optimisation of knowledge resources. However, in most developing countries, like Pakistan, this is not the case; the university teachers are very passive in KS. While there is a strong body of knowledge in the domain of KM and KS in a commercial environment, a very little research is done on KS in universities (Fullwood *et al.*, 2013). Accordingly, the current study will endeavour to fill this literature gap.

Knowledge is omnipresent in the individuals (Amayah, 2013) and organisations should utilise this resource to gain and maintain competitive advantage as the knowledge belongs to human being, so organisations need the cooperation of the individual to share their knowledge with their colleagues in the organisation (Gupta, 2012; Lin and Hwang, 2014). Many studies have shown a positive association of KS with the effectiveness of the organisation and innovation capability of the organisation (Al Muzaffar and Alshare, 2015; Yeşil and Dereli, 2013), and improved productivity (Noaman and Fouad, 2014). Some other researchers have shown a positive impact of the KS on employee performances (van Woerkom and Sanders, 2010) (van Woerkom and Sanders, 2010). KS also helped in shaping innovative behaviour (Yu *et al.*, 2013).

Amayah (2011) stated that to implement the KM activities successfully, it is essential to analyse the factors which affect individuals to share knowledge. According to Al-Hawamdeh (2003), scholars should also focus on individual perspectives of KS, rather than on technological or organisation-level factors (Amayah, 2011) as knowledge is produced by the individuals and individual characteristics impact on the process of KS. Thus, this study aimed to investigate the individual-level factors (five-factor model of personality, emotional intelligence and religiosity) for KS behaviour in public HEIs of Pakistan.

Few prior studies have empirically investigated the impact of personality traits by utilising the five-factor model of personality (Gupta, 2008; Matzler *et al.*, 2008; Teh *et al.*, 2011). However, most of these studies were conducted in Western economies, and to the best of the authors' knowledge, no study has been conducted to jointly investigate the association between religiosity, emotional intelligence, personality traits and KS.

Considering that fact that the social environment and culture may affect the personality and behaviour of an individual (Agyemang *et al.*, 2016), it is imperative to investigate the association between individual-level factors and KS in the Pakistani context, as most of the previous research has been conducted in Western culture.

2. Related literature and hypothesis development

Knowledge sharing

Knowledge can be seen as information that is presented in such a way that it has meaning to the person consuming it. According to Nonaka (1994), knowledge exists in two dimensions: explicit and tacit:

- (1) Tacit knowledge can also be described as "personal knowledge". It consists of values, viewpoints and intuition that are gathered through experience. One example would be the knowledge of faculty members that could be tentative and imprecise

due to it being linked to personal experiences, resulting in it not always being coupled to measures of learning outcomes that are well-defined.

- (2) Explicit knowledge is also known as “codified” knowledge, and it can be communicated and spread easily. The knowledge contained in textbooks is codified as symbols like words, formulae and numbers, or physical items such as photographs, documents, procedures and databases. Knowledge workers do, however, seem to share a mix of tacit and explicit knowledge among themselves, with the explicit knowledge being highly impersonal and informal (Agyemang and Boateng, 2019).

Within an organisation, however, tacit and explicit knowledge are not separate but rather complement each other and expand through social activities and interaction (Nonaka and Takeuchi, 1995). KS occurs when people spread the knowledge they have and distributes it within an organization. KS can be defined as any activity where organizations, groups or individuals diffuse or transmit knowledge. KS can, however, arouse the feeling of a conflict of interest amongst the individuals involved. When knowledge is shared through combination and socialization, a person’s tacit knowledge is shared and then becomes another person’s tacit knowledge. This also happens when explicit knowledge is shared. During this process, knowledge is internalized and externalized both in the organization and the individual. As knowledge is shared and distributed within an organization through everyday dialogue, KS should not be seen as a supplementary organisational activity, but as inherent to the activities carried out by the organization’s members daily).

Past studies introduced a number of theories to explain the factors influencing individual behaviours of KS (Boer *et al.*, 2011; Cabrera *et al.*, 2006). This study explains the KS in perspective of the five-factor model of personality or Big Five as presented by (McCrae and John, 1992).

The personality traits and KS

Knowledge is produced, stored and shared by individuals rather than organisations (Chan Kim *et al.*, 1998), and individuals differ in how they share knowledge (Teh *et al.*, 2011). KS depends on individuals’ willingness and consent for the sharing of their most valuable assets, including information, experience, and whatever lessons they have learned through their work processes and interpersonal interactions. Personality traits have been examined concerning KM at the individual level, including the relationship between personality traits, innovation and KM in the biotechnology sector (Hsieh *et al.*, 2011). The relationship between KS and the Big Five factors of personality has also been studied (Teh *et al.*, 2011). An individual’s personality traits, including openness to experience, agreeableness and conscientiousness, are examples of individual factors that may influence KS (Matzler and Renzl, 2007). Personality seems to be the most important of these factors that correlate with KS quality. Several other studies also postulate that an individual’s characteristics can predict why some individuals share knowledge while others not (Agyemang and Boateng, 2016; Amayah, 2013; Cabrera *et al.*, 2006).

Extroversion

Besser and Shackelford (2007) stated that individuals with high extroversion trait of personality are inclined to be more sociable. Past studies revealed that extrovert individuals are energetic, enthusiastic and optimistic (Farrukh *et al.*, 2016; Rahman *et al.*, 2018a). It is advocated that extroverts have positive emotions and they contribute a great number of efforts for the satisfaction of team (Barrick *et al.*, 1998; McCrae, 1996; Watson *et al.*, 1988). As the extrovert personality, individuals are emotionally positive and are more satisfied with working in teams, so it is reasonable to expect them to be more positive in KS. In fact, where people are high on extroversion, KS is highly likely to be effective and successful

(Agyemang and Boateng, 2016). By these qualities, we can say that the employees who are having extrovert trait will share more knowledge. Therefore, we postulate that:

H1. Extroversion is positively linked to KS.

Neuroticism

According to Benet-Martinez and John (1998), neuroticism personality is characterised by different moods, especially negative such as sadness, tensions and anxiety. The researchers showed that people who score high on neuroticism generally show a negative attitude towards their fellow being (Benet-Martínez and John, 1998). The low self-confidence and high anxiety level make it difficult for neurotic individuals to get involved in KS (Agyemang and Boateng, 2016). From this, we can predict that employees who score high on neuroticism may be a bit reluctant to share knowledge. Thus, our second research hypothesis is stated as follows:

H2. Neuroticism is negatively linked to KS.

Agreeableness

Farrukh *et al.* (2017) stated being tolerant, mild natured, harmonious, open-hearted and joyous are the attributes of high agreeableness in employees. They prefer working with each other not against each other (Liao *et al.*, 2004), focus on their relationships with others and always try to keep them companionable and pleasing (Organ and Ryan, 1995). According to recent studies, agreeableness (Farrukh *et al.*, 2016; Farrukh *et al.*, 2017) is an individual's personality trait which is a collection of different characteristics including honesty, truthfulness, self-sacrifice, commitment, simplicity and cool-mindedness. People with a high level of agreeableness are supportive and helpful and are more likely to share knowledge (Agyemang and Boateng, 2016; Memon *et al.*, 2016). Thus, based on the characteristics of agreeableness, we postulate the following third research hypothesis:

H3. Agreeableness is positively linked to KS.

Conscientiousness

Bozionelos (2004) defined conscientiousness as a coalition among the sense of responsibility, intensity and consistent hard work. According to Barrick and Mount (1991), individuals with high conscientiousness are reliable, responsible, well mannered, high achieving and persistently hard-working. The characteristics of conscientiousness personality are proficiency, discipline, obedience, endeavouring achievement, self-organised and consideration (Costa and McCrae, 1992). Conscientiousness people are more likely to socialise in the organisation; these characteristics are vital in the process of KS. In recent research, Memon *et al.* (2016) found a positive association between KS and conscientiousness. Hence, by characteristics possessed by the conscientiousness people and the results of prior studies (Matzler *et al.*, 2008; Memon *et al.*, 2016), we conjecture the fourth research hypothesis as follows:

H4. Conscientiousness is positively linked to KS.

Openness to experience

Openness to experience is defined as a multi-dimensional phenomenon, including enhancement of benefits, adaptive thinking, responsiveness to innovation and capability of developing realistic ideas and goals (Bozionelos, 2004). Digman (1990) gave another definition, according to which creativity, thinking from a different perspective and keenness to learn together are known as openness to experience. Few past studies found a strong and

substantial influence of openness to experience on KS (Agyemang and Boateng, 2016; Matzler *et al.*, 2008; Memon *et al.*, 2016). Keeping in view the characteristics attached to the openness to experience trait, we can expect that people with a higher level of openness will be more likely to share knowledge. Accordingly, we postulate the fifth research hypothesis in the following form:

H5. Openness to experience is positively linked to KS.

Religiosity and KS

A growing body of the literature proposes that religiosity has significant effects on the life of its believers; these effects include the way people live, behave and work. Religion is a belief system which could make a significant impact on employee behaviour and performance by providing a frame of reference which could guide decision making in organisations (Osman-Gani *et al.*, 2013). Although religion has a significant impact on employee life (Day, 2005; Hess, 2012; Riaz *et al.*, 2016; Wu *et al.*, 2017), there exists a research gap linking the religiosity and KS the behaviour of employees in organisations. For this reason, this paper is an attempt to overcome this gap.

Before moving to postulate the hypothesis, it is imperative to define the concept of religiosity. Osman-Gani *et al.* (2013) asserted that religiosity is the measure of belief of an individual in God as well as to a measure of participation in religious activities such as offering services, worshipping regularly and engaging in other religious activities. On the other hand, Valasek (2009) summarized ten concepts of religiosity that influence someone's behaviour, which are as follows: "(1) Proselytizing, (2) Church attendance, (3) Amount of prayer, (4) Doctrine or dogma, (5) Authoritarian, (6) Self-righteousness, (7) Belief in the divine, (8) Ritualistic, (9) Integration, and (10) Scripture reading". People who follow a definite religious doctrine will display a particular set of behaviours, which are reflected in their personal, social as well as work life. Therefore, we can expect that religion will also affect the work behaviour of an employee (Ntalianis and Darr, 2005) because it is a powerful source of individual values (Farrukh *et al.*, 2016; Ghazzawi and Smith, 2009; Riaz *et al.*, 2016).

In prior studies, KS success was found to be linked with behaviour factors (Bock *et al.*, 2005; Liao *et al.*, 2004). The attitude towards KS is derived from religious and social values. Thereupon, it is the need of the hour to find the factors which affect the social values and KS behaviour so that a long-term benefit for an organisation may be yielded (Guzman and Wilson, 2005). Despite all this, there is a gap in the literature and theory, which links religiosity and KS. Religion is a belief system which is woven into the work life of employees, and it serves as a principle for reacting and interpreting many organisational experiences, including KS (Farrukh *et al.*, 2016). Therefore, based on this discussion, we present our sixth research hypothesis as follows:

H6. Religiosity is positively linked to KS.

KS and emotional intelligence

Emotional intelligence has been an attractive area of research in organisational behaviour and management theory. Some definitions of emotional intelligence have been proposed, but the one proposed by Salovey and Mayer (1990) has gained lots of popularity (Ansari and Malik, 2017). Their model of emotional intelligence focusses on the cognition-emotion linkages. Salovey and Mayer (1990) are the first to coin this definition, they affirm that emotional intelligence is "the ability to control the one owns emotions and emotions of others, discriminate among them and use this information to guide thoughts and actions", which later was modified to "the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth".

Gurbuz and Araci (2012) posited that empathy, self-motivation and self-awareness are the dimensions of emotional intelligence which help KS. A study conducted by Hooff *et al.* (2012) found that empathy and pride, which are dimensions of emotional intelligence, have affected the KS behaviour and willingness. Likewise, Arakelian *et al.* (2013) found that relationship management, social awareness and self-awareness had a significant association with KS. Acquisition of knowledge and sharing of knowledge mainly depends upon the individual personality. According to Peter Salovey and Mayer (1990), the individuals who rank high on the emotional intelligence scale might get more exposure to internal experiences. Therefore, they are considered better in transmitting inner experiences. Moreover, emotional intelligence is the ability of an individual to have empathy, transparency, positive mindset and ability to motivate and develop others (Sharma *et al.*, 2013). Accordingly, it is expected that emotionally intelligent people will be more engaged in social interaction; therefore, it is more likely that they will share knowledge more with co-workers.

In another related study, Goh and Lim (2014) found that individuals who score high on emotional intelligence would actively take part in acquiring and KS. Similarly, Obermayer-Kovács *et al.* (2015) and Tuan (2016) determined a positive relationship between emotional intelligence and KS. However, there are very limited studies that investigated the impact of emotional intelligence on KS in Pakistani context. Therefore, it is vital to explore this area in the Pakistani context to further generalize the findings. Thus, from the above discussion, our final research hypothesis is postulated as follows (Figure 1):

H7. There is a positive relationship between emotional intelligence and KS.

3. Method and materials

Participants and data collection procedure

The population of the study was academicians working in public sector universities located in three major cities of Pakistan, namely Faisalabad, Rawalpindi and Islamabad. Six universities were selected to collect the data. Different departments, such as social sciences, engineering, arts and humanity, and computer sciences, were approached. To avoid

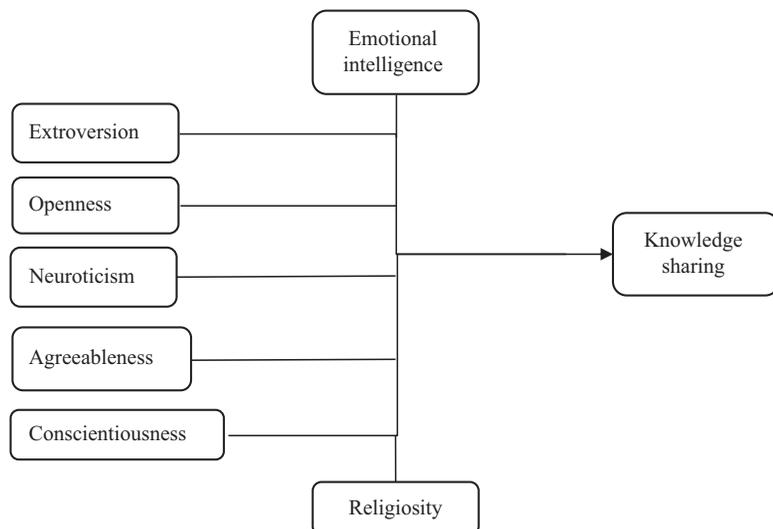


Figure 1.
A conceptualized
model of the study

common method bias, data collection was done in two stages. In the first stage, random questions regarding KS behaviour and personality traits were distributed, and after a time lag of one month, another questionnaire containing questions regarding religiosity and emotional intelligence was distributed. At the end of the data collection, a total of 370 completed survey questionnaires were received.

Table I presented the descriptive analysis results of the survey data. The analysis of the participants' characteristics revealed that the majority of the study sample was male (56.5 per cent), as Pakistan is a male-dominated society wherein the majority of employees are males (Khilji, 2003). Most participants were between 20–30 and 31–40 years of age, as anticipated since these are the working-age groups. A higher percentage of the sampled participants (57.9) had achieved their master degree. Further, the majority of the sample participants (35.6 per cent) had work experience between one and five years.

Materials[1]

Religiosity. Religious orientation scale (ROS) is the most cited scale of religiosity developed by Allport and Ross (1967). ROS is used in several studies related to organisational behaviour and social sciences. However, this scale was originally developed to measure the religiosity of Christianity based in North America. Therefore, the limitation of ROS is that it may not be valid to measure the religiosity of Asian people, especially Muslims. Thus, in this study, we adopted a scale developed by Mokhlis (2009) because this scale had already been validated in Pakistan by Farrukh *et al.* (2016).

The personality traits. The five-factor model of personality traits instruments was used to measure the personality traits of the employees. The Big Five Inventory (BFI) (John and Srivastava, 1999) was developed to assess the Big Five personality domains of extroversion, agreeableness, conscientiousness, neuroticism and openness. Respondents indicate their level of agreement with each item using a five-point Likert scale. The BFI is one of the most cited personality measures.

Characteristic	Category	<i>n</i>	%
Gender	Male	225	60.8
	Female	145	39.2
	Total	370	100.0
Age group	20–30 years	140	37.8
	31–40 years	116	31.4
	41–50 years	67	18.1
	51–60 years	38	10.3
	Over 60 years	9	2.4
	Total	370	100.0
Education level	Bachelor	39	10.5
	Master	197	53.3
	PhD	125	33.8
	Postdoc	9	2.4
	Total	370	100.0
Work experience	1–5 years	125	33.8
	6–10 years	86	23.2
	11–15 years	56	15.2
	16–20 years	46	12.4
	More than 20 years	57	15.4
	Total	370	100.0

Table I.
A demographic snapshot of the survey participants

Emotional intelligence and KS. Wong and Law emotional intelligence scale (Wong *et al.*, 2007) scale was used to assess the emotional intelligence of the respondents. And a five-items scale of KS was adapted from Bock *et al.* (2005).

4. Data analysis

Data analysis was done with the help of partial least squares structural equation modelling (PLS-SEM) by using SmartPLS software. Partial least square is a powerful second-generation multivariate data analysis technique. PLS-SEM can test measurement and structural model at the same time with minimum error variance (Hair *et al.*, 2017). This technique has become popular and has been used in many recent studies (Farrukh *et al.*, 2019; Shim, 2010). In PLS-SEM, data analysis is carried out in two stages: in the first stage, the validity and reliability of the measurement model are assessed, and in the second stage, a structural model is assessed for the significance of path coefficients, productive relevance of the model and predictive power of the model. The following subsections elaborate the data analysis process in detail.

Evaluation of a measurement model

The validity and reliability of a measurement model are assessed by investigating the convergent validity (CV), internal consistency and discriminant validity (Hair *et al.*, 2017). Internal consistency is measured by assessing composite reliability (CR). The threshold value of CR is 0.708. The CV was assessed with the help of factor loading (FL) and average variance extracted (AVE). The CV is the “extent to which a measure correlates positively with alternative measures of the same construct” (Hair *et al.*, 2017). An FL should be 0.708 or higher, and 0.70 is considered close enough to be acceptable (Hair *et al.*, 2017). However, indicators with weaker FLs (i.e. 0.40–0.70) can be retained if other indicators possess high loadings, and the overall construct should explain at least 50 per cent variance (AVE = 0.50) (Hair *et al.*, 2017). The AVE scores of all the constructs also exceeded the threshold value of 0.50, indicating adequate CV. Table II presents the FLs, CR and AVE scores.

Another criterion for checking the validity of the construct is discriminant validity: “it is the extent to which a construct is truly distinct from other constructs by empirical standards” (Hair *et al.*, 2017). In this study, discriminant validity was checked with the help of Fornell and Larcker’s (1981) criteria, which states that the square root of AVE value should be higher than the squared correlation with other constructs (Fornell and Larcker, 1981). Results in Table III show that the discriminant validity was achieved.

Structural model assessment

Before assessing the significance of path coefficients by bootstrapping, the structural model should be checked for any multicollinearity (Hair *et al.*, 2017). Multicollinearity is a measure of the correlation between two formative variables which can cause a problem in model estimation and its significance (Hair *et al.*, 2017). Multicollinearity levels are assessed by a variance inflation factor (VIF) and tolerance level. The tolerance level of 0.20 or lower and VIF value of equal to 5 or greater than 5 is problematic. In the current research, all the values of VIF and tolerance level are in the acceptable range (see Table IV).

R-squared (R^2)

The multicollinearity check is followed by the evaluation of R^2 values for endogenous factors. The R^2 value is a percentage change in the endogenous variables caused by the exogenous variables. In this study, KS is conceptualized as an endogenous while religiosity,

Construct	Item	FL	AVE	CR	Cronbach's α
Emotional intelligence	Emotional intelligence 1	0.871	0.6501	0.858	0.775
	Emotional intelligence 2	0.811			
	Emotional intelligence 3	0.712			
	Emotional intelligence 4	0.777			
	Emotional intelligence 5	0.871			
	Emotional intelligence 6	0.754			
	Emotional intelligence 7	0.765			
	Emotional intelligence 8	0.698			
	Emotional intelligence 9	0.812			
	Emotional intelligence 10	0.714			
	Emotional intelligence 11	0.788			
	Emotional intelligence 12	0.782			
Religiosity	Religiosity 1	0.887	0.6783	0.751	0.705
	Religiosity 2	0.876			
	Religiosity 3	0.775			
	Religiosity 4	0.773			
	Religiosity 5	0.789			
	Religiosity 6	0.798			
Agreeableness	Agreeableness 1	0.879	0.7025	0.744	0.795
	Agreeableness 2	0.843			
	Agreeableness 3	0.763			
	Agreeableness 4	0.697			
Consciousness	Consciousness 1	0.764	0.6976	0.814	0.865
	Consciousness 2	0.876			
	Consciousness 3	0.889			
	Consciousness 4	0.887			
	Consciousness 5	0.778			
Neuroticism	Neuroticism 4	0.789	0.686	0.882	0.834
	Neuroticism 2	0.762			
	Neuroticism 1	0.679			
Extroversion	Extroversion 3	0.898	0.836	0.953	0.855
	Extroversion 1	0.773			
	Extroversion 2	0.876			
	Extroversion 4	0.886			
Openness	Openness 1	0.778	0.6632	0.886	0.854
	Openness 2	0.782			
	Openness 3	0.874			
	Openness 4	0.784			
Knowledge sharing	Knowledge sharing 1	0.886	0.699	0.878	0.882
	Knowledge sharing 2	0.879			
	Knowledge sharing 3	0.887			
	Knowledge sharing 4	0.876			

Table II.
Quality criteria for the measurement model

the personality traits and emotional intelligence are conceptualized as exogenous variables. The R^2 value depicts the predictive capability of the model. The R^2 value for the endogenous construct is found as 0.806.

Hypothesis testing

After evaluating the R^2 value, the significance of the path coefficients is assessed, and for that purpose, we used 5,000 resamplings as recommended by Hair *et al.* (2017). Table V and Figure 2 show the t -statistic values, which are above than the critical value of 1.96. Thus, all the research hypothesis were supported.

Table III.
Fornell–Larcker
criteria

	1	2	3	4	5	6	7	8
1. Emotional intelligence	0.806							
2. Knowledge sharing	0.331	0.836						
3. Religiosity	0.223	0.331	0.823					
4. Agreeableness	0.225	0.312	0.204	0.838				
5. Conscientiousness	0.345	0.346	0.402	0.230	0.835			
6. Neuroticism	0.412	-0.445	0.306	0.370	0.430	0.828		
7. Extroversion	0.354	-0.401	0.341	0.254	0.340	0.370	0.914	
8. Openness	0.365	0.402	0.321	0.313	0.270	0.420	0.347	0.814

Note: The diagonals represent the square root of the AVE, while the other entries represent the squared correlation

Table IV.
Multicollinearity
assessments in the
structural model

Variable	Multicollinearity statistics	
	Tolerance level	VIF
Extroversion	0.514	1.947
Agreeableness	0.408	2.453
Conscientiousness	0.499	2.004
Neuroticism	0.579	1.728
Openness	0.489	2.046
Emotional intelligence	0.421	1.732
Religiosity	0.455	2.187

Table V.
Hypothesis testing

	β	<i>t</i> -statistic	Decision
Extroversion → knowledge sharing	0.279	3.304	Supported
Neuroticism → knowledge sharing	-0.215	2.444	Supported
Agreeableness → knowledge sharing	0.240	3.198	Supported
Conscientiousness → knowledge sharing	0.244	2.379	Supported
Openness → knowledge sharing	0.395	3.511	Supported
Emotional intelligence → knowledge sharing	0.253	3.219	Supported
Religiosity → knowledge sharing	0.235	2.648	Supported

Effect size

Successively, the effect size (f^2) was calculated to measure the contribution of religiosity, the personality traits and emotional intelligence to our endogenous variable, i.e. KS, by using the following formula:

$$(R^2 \text{ included} - R^2 \text{ excluded}) / 1 - R^2 \text{ included.} \tag{1}$$

The rule of thumb for f^2 is that the values of 0.02, 0.15 and 0.35 are considered as weak, medium and large, respectively.

The results of f^2 in Table VI show that extroversion and openness have the largest effect size, while the rest of the factors have medium-size effects on KS.

5. Discussion

The study was focussed on investigating the influence of individual characteristics on KS in HEIs of Pakistan. The findings of this study showed that individual traits have a significant

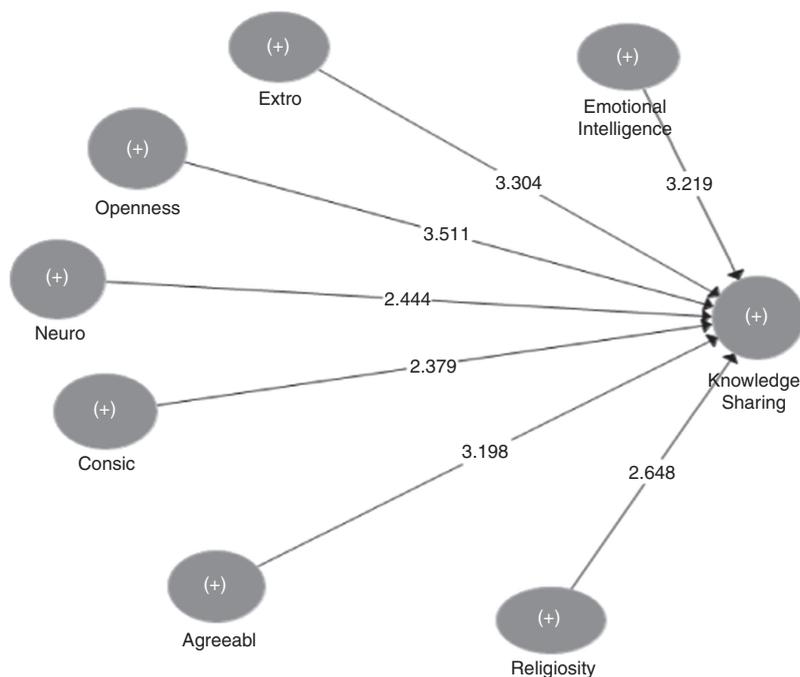


Figure 2.
t-values of the path coefficients

Relationship	Effect size (f^2)
Extroversion → knowledge sharing	0.38
Neuroticism → knowledge sharing	0.15
Agreeableness → knowledge sharing	0.14
Conscientiousness → knowledge sharing	0.16
Openness → knowledge sharing	0.38
Emotional intelligence → knowledge sharing	0.23
Religiosity → knowledge sharing	0.19

Table VI.
Effect size of the study variables

impact on KS. In detail, this study endeavoured to test the seven research hypotheses. The first hypothesis was concerned to investigate the association between the extroversion trait and KS. The empirical analysis showed a positive impact of extroversion on KS, which means the lecturers/teachers in HEIs having extrovert personality will be more likely to share knowledge. This finding is in line with prior studies (Agyemang and Boateng, 2016; Memon *et al.*, 2016). The present research also supports the proposition that the characteristics of extrovert individual enforce them to share knowledge (Rahman *et al.*, 2018b). Thus, we conclude that individuals who score higher on this trait will be more willing to share knowledge.

The second research hypothesis was aimed to assess the link between neuroticism and KS. The empirical findings of the study demonstrated a negative association between neuroticism and KS; this is because of the temperamental issues of the individuals who are not emotionally stable. Therefore, we can say that individuals who are emotionally stable and have self-confidence will be more inclined to get engaged in KS activities as compared to neurotic individuals. These findings are in line with past research (Anwar, 2017; Esmaeelinezhad and Afrazeh, 2018).

In the third research hypothesis, we assessed the connection between agreeableness and KS. The results of structural equation modelling showed a positive association between agreeableness and KS. This could be due to the characteristics of agreeable people, as agreeable individuals prefer to work with others (Liao *et al.*, 2004) and they always care about the relationship with others and try to be companionable pleasing (Organ and Ryan, 1995). People who score high on this trait are more helpful, sympathetic, kind-hearted and conflict-avoiding. Therefore, individuals who score more on agreeableness will be more likely to share knowledge as compared to those who score less on this trait because KS harness well in an environment which is dominated by trust and mutual benefits (Esmaeelinezhad and Afrazeh, 2018).

In the fourth research hypothesis, we analyzed the relationship between conscientiousness and KS. The findings from our statistical analysis demonstrated a positive association between conscientiousness and KS and the intention of lecturers of HEIs in Pakistan, which is in line with Gupta (2008) and Memon *et al.* (2016). However, our result contrasted with the findings of Agyemang and Boateng (2016); this could be due to the reason of characteristics possessed by the conscientious people, as mentioned in the introduction to the personality traits that conscientious people are hard-working, responsible, dutiful and sociable. Thus, we can conclude that university teachers who score higher on the conscientiousness trait will be more dutiful and will intend to share more knowledge as compared to their counterparts with lower scores.

The fifth hypothesis of this research focussed on testing the link between openness to experience and KS in HEIs of Pakistan. The empirical evidence revealed a positive association between these two variables. The finding is inconsistent with the results by (Teh *et al.*, 2011) because individuals with openness to experience trait are more open to learning and experiencing new things. Accordingly, we concluded that those teachers who are more open to experience would be more likely to share knowledge.

The sixth research hypothesis was linked to the association between religiosity and KS. The results showed a positive relationship between these two measures. Religion plays a vital role in shaping the behaviour and attitude of a person, and behaviour is the predictor of action. The study was conducted in the Pakistani context where 96 per cent of the population is Muslim, and a similar percentage is present in the educational institutes as employees. Therefore the results are not astonishing. It is logical that an economy which is dominated by Muslims may support the KS activities, as the foundation of Islam was laid on "Iqra" (read) and the Prophet Muhammad (Peace Be Upon Him, PBUH) has also laid great stress on knowledge acquisition and dissemination, this could be found in many Ahadith (saying of the Prophet Muhammad ﷺ). He said to his companions, "Learn the obligatory acts and the Qur'an and teach them to the people, for I am a mortal" (Tirmidhi 244). In another saying, he (PBUH) told his companions to acquire the knowledge and impart it to the people (Tirmidhi 279).

In the final hypothesis of this study, we investigated the connection between emotional intelligence and KS in Pakistani HEIs. Our data revealed a positive association between the two variables. Emotional intelligence perception is "social intelligence" by which the ability to understand and manage individuals and take sensible actions in human relations are signified (Thorndike, 1920). Therefore, it is logical and reasonable to expect KS by emotionally intelligent individuals because they show concerns to others' emotions.

6. Research contributions and implications

The paper contributed to the body of knowledge by focussing on KS among the university employees by using the dispositional factors (the personality traits, religiosity and emotional intelligence). Just a few prior studies have been conducted on the five-factor model of personality and KS; however, to the best of the researchers' knowledge, there is no study which empirically tested the association of religiosity and emotional intelligence with KS, especially in the context of developing economies, such as Pakistan. Thus, our study added a unique contribution in the domain of KM.

As emotional intelligence is an essential part of human personality which cannot be easily changed and substituted (Ansari and Malik, 2017); for this reason, workforces must be asked to participate in structured development and training programmes to develop their emotional intelligence. These programmes should include courses that focus on developing the ability to feel about oneself and others and to manage them effectively. If employees have strong emotional intelligence, they are more likely to share knowledge among the members of the organization. In addition to it, firms should focus on activities designed to promote the “socialization” of employees to promote the exchange of knowledge. Besides, the findings of this study showed a negative association between neurotics and KS behaviour. Therefore, this research suggests that human resource development practitioners should come up with training and development programmes to enhance the KS behaviour of employees who are already working in universities. In addition to this, some financial rewards system should also be incorporated to motivate neurotic employees to share their knowledge with colleagues and students.

7. Research limitations and future directions

This study carries some limitations, and the first limitation is related the generalizability of the findings as our research solely focussed on the university lectures; therefore, the results of this paper might not apply to other industries. Consequently, we highly recommend that future studies should investigate other sectors of the economy as well. The second limitation is about the variables used in this study, as our work solely focussed on the dispositional factors by ignoring many structural, environmental and organisational factors which limits the holistic view of KS in universities; therefore, future research should be conducted by incorporating the structural, environmental and organisational factors. The final limitation is regarding the context of the study; as the research was conducted in Pakistani culture, which is inclined towards Islam, this contextual constraint has made the generalizability of the results limited, and thus it is strongly recommended that this study should be conducted in a multi-religion society so that a holistic view of religiosity might be investigated.

Note

1. Items of the survey questionnaire are given in the Appendix.

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Appendix

The survey questionnaire items

The personality traits include:

- (1) Extroversion:
 - I see myself as someone who tends to be quiet.
 - I see myself as someone who has an assertive personality.
 - I see myself as someone who is sometimes shy, inhibited.
 - I see myself as someone who is outgoing, sociable.
- (2) Agreeableness:
 - I see myself as someone who tends to find fault with others.
 - I see myself as someone who starts quarrels with others.
 - I see myself as someone who has a forgiving nature.
 - I see myself as someone who likes to cooperate with others.
- (3) Conscientiousness:
 - I see myself as someone who does a thorough job.
 - I see myself as someone who can be somewhat careless.
 - I see myself as someone who tends to be lazy.
 - I see myself as someone who perseveres until the task is finished.
 - I see myself as someone who is easily distracted.
- (4) Neuroticism:
 - I see myself as someone who is depressed, blue.
 - I see myself as someone who worries a lot.
 - I see myself as someone who can be moody.
 - I see myself as someone who gets nervous easily.

(5) Openness:

- I see myself as someone who has an active imagination.
- I see myself as someone who is inventive.
- I see myself as someone who values artistic, aesthetic experiences.
- I see myself as someone who is sophisticated in art, music or literature.

(6) Religiosity:

- Religion is especially important to me because it answers many questions about the meaning of life.
- I spend time trying to grow in understanding of my faith.
- Religious beliefs influence all my dealings in life.
- It is important for me to spend periods of time in private religious thought and prayer.
- I enjoy taking part in the activities of my religious organization.
- I enjoy spending time with others of my religious affiliation.

(7) Emotional intelligence scale:

- I have a good sense of why I feel certain feelings most of the time.
- I have a good understanding of my own emotions.
- I really understand what I feel.
- I always know whether I am happy or not.
- I always know my friends' emotions from their behaviour.
- I am a good observer of others' emotions.
- I am sensitive to the feelings and emotions of others.
- I have a good understanding of the emotions of the people around me.
- I always set goals for myself and then try my best to achieve them.
- I always tell myself I am a competent person.
- I am a self-motivating person.
- I would always encourage myself to try my best.

(8) Knowledge sharing:

- I will share my work reports and official documents with members of my organization more frequently in the future.
- I will always provide my manuals, methodologies and models for members of my organization.
- I intend to share my experience or know-how from work with other organisational members more frequently in the future.
- I will always provide my know-where or know-whom at the request of other organisational members.

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The added value of a new interviewing tool for the selection of candidates for the teaching profession

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Abstract

Purpose – An interview is one of the most widely used tools in the admission of candidates for an academic study, particularly in the applied professions. The purpose of this paper is to present a study that assesses the quality of a new interview tool for the selection of teacher-training candidates, in order to find out its added value over other selection tools in use and to justify the effort invested in it.

Design/methodology/approach – The study was longitudinal and was conducted over the course of a three-year period. The study population consisted of all the college's undergraduate students that were candidates for the teaching profession. The information was processed quantitatively using descriptive as well as inferential statistics while addressing diverse comparisons.

Findings – The main findings indicate a high quality of the new tool. The usage of the tool improved the selection procedure of qualified candidates, especially borderline candidates who would be rejected if using only the matriculation and the psychometric admission tools. A logistic regression model revealed the admission new interview tool to be the sole statistically significant predictor of enrollment in the college. The study reported the interview score to be the sole statistically significant predictive factor in the model that forecasts student field-practice grades, particularly in their first year of study.

Originality/value – This information further corroborates that a good interview tool allows a more in-depth and well-based discussion about worthy candidates who do not meet the strict grade admission requirements. This invites discussion regarding the critical place of the interview in selection of candidates, especially in applied professions.

Keywords Admission interview, Evaluation of candidates for higher education, Teacher-training candidates

Paper type Research paper

Introduction

Like many institutions of higher education, teacher-training colleges maintain a system for candidate selection. The aim of the selection process is to ensure the admission of candidates who possess the potential for academic success, and the prerequisites needs to be developed during the training that are necessary for holding positions in the field of teaching and education (Levy-Feldman and Libman, 2004).

In many teacher-training institutions, selection is conducted using different tools including the candidate's high school grades (matriculation examination, GPA), the score on the standardized psychometric exam (ACT) or a combination of both. According to studies, these tools pose a high academic predictive validity.

Nevertheless, in many institutions, suitability for admission is also conducted using different forms of interviews. Not like the other tools in use, the interview requires a lot of investment and money on behalf of the institute. The question whether it has added value over the other admission tools that are cheaper and proved to be effective in predicting academic metrics arises.

The purpose of the study presented in this article was to examine the quality of a new interview selection tool for teaching candidates in a large teacher-training college in Israel, in



order to find out its added value over other selection tools in use, hoping the findings will justify the effort invested applying the tool. The main value of the investigation is to justify the usage of a valid interview selection tool over the already valid selection academic-cognitive tools in use (matriculation and psychometric) by showing its added value as improved the selection procedure of qualified candidates who do not meet the cognitive tools in use.

Theoretical background

Higher education institutions employ different methods for admitting suitable candidates. Selection methods can be based on pre-study selection or can take place during the student's initial years of study. The former method, pre-study selection, is more common and is practiced widely in many countries (Faibish and Goldschmidt, 2006; Owen *et al.*, 2014).

The major selection tools employed in the admission of candidates for general undergraduate study include high school grades (in Israel, matriculation examination scores) and, in some countries (e.g. Israel and the USA), the candidate's score on a psychometric entry exam. Using both tools increases the predictability of academic success (Oren, Kennet-Cohen, Turvall, and Allalouf, 2014).

In addition to these two criteria, additional selection tools are customarily used primarily for applied professions. Among the most prominent of these tools is the admission interview, which is extremely common in candidate selection for programs in medicine, social work and teacher training.

Many studies addressing the subject of candidate selection focus on the validity and reliability of matriculation scores and psychometric test scores and indicate the high validity of these tools in predicting academic success (Haimovitch and Ben Shahar, 2004; Kennet-Cohen, 2016; Kleper *et al.*, 2014; Oren, Kennet-Cohen, Turvall and Allalouf, 2014; Oren, Kennet-Cohen, Turvall, and Saar, 2014). These predictive factors have elicited substantial debate and criticism, particularly with regard to their ability to predict student degree completion and dropout (Ben-David and Shaor, 2012; Yogev and Ayalon, 2000). A broad-range study found that the relationship between these two predictors, the matriculation scores and psychometric test scores, and the probability of degree completion is weak, due to numerous variables that are not related to academic ability, such as motivation, socioeconomic background and family status, which influence students' chances of degree completion or drop out (Haimovitch and Ben Shahar, 2004).

As for the interview, studies demonstrated relatively lower predictive validity as regards to academic performance but a predictive capacity for non-academic parameters such as the capacity for interpersonal communications, empathy and maturity (Wilson *et al.*, 2012; Pau *et al.*, 2016). In particular for the teacher-training candidates, researches reports that admission interviews possess a relatively high predictive capacity regarding student performance in practical work, when compared to other admission criteria such as the ACT exam and GPA scores (Byrnes *et al.*, 2000).

Scholars have identified different variables that unintentionally influence the student selection interview efficiency. It was found that group interviews possess higher predictive validity than personal interviews (Byrnes *et al.*, 2000; Petrarca and LeSage, 2014; Schectman, 1988); information collected in the process of a structured interview is of higher validity and reliability than information collected through an unstructured process (Ben-Shachar and Beller, 1993; Dube and Zinatelli, 1997; Klotz and Whiting, 1999; McDaniel *et al.*, 1994; Schmidt and Rader, 1999). In addition, researchers emphasize that the interview has an additional contribution beyond the other selection tools as it allows to present the institute to potential candidates, to coordinate expectations with candidates, to facilitate staff involvement in, and commitment to, the selection of potential students, and to help faculty members get to know future students (Chambers and Roper, 2000; Levy-Feldman and Libman, 2004; Reumer and Van Der Wende, 2010; Shahani *et al.*, 1991).

During the 2013–2014 academic year, a major teacher-training college in Israel resolved to formulate a new interview selection tool. The incentive to do so was to improve the selection of more qualified candidates and to better align the selection process with the ethos and the spirit of the college and its educational worldview. The new interview selection tool was constructed in light of the recommendations of the scholarship (Levy-Feldman and Nevo, 2013) and with the participation of the faculty's deans and the heads of the college's departments. The tool combines individual as well as group parts and was applied to candidates for undergraduate programs in three out of the four major college faculties which includes the Faculty of Education (includes the Departments of Early Childhood, the Department of Special Education and the department of Elementary School), the Teaching Science faculty (includes the Department of Physical Education and the Department of Sciences and Biology Teaching) and the Teaching Humanities and Social Sciences faculty (includes the Departments of English Teaching and the Department of History Teaching)[1]. In order to increase the content validity of the tool (the extent to which a measure represents all facets of a given construct), the tool was examined by experts from the different faculties until we reached a high degree of agreement regarding the tool's components.

The aim of this study was to examine the quality of the new interview selection tool mainly in order to find out if it has added value over the other two tools in use (the matriculation and psychometric), which justify the effort and investment in conducting it.

The quality of the new interview selection tool was examined in three ways: by assessing the ability of the interviewers using the new tool to distinguish between candidates of different academic status; by considering the tool's added value in comparison to other admission tools; and by examining the tool's capability to predict student grades.

It was expected that the information provided by the new interview selection tool would facilitate decision making regarding the college's selection and admission of candidates that was more accurate than the standard matriculation and psychometric scores. It was also expected that the information collected using the new tool would facilitate a more in-depth and well-based discussion regarding borderline candidates that did not meet entry pre-requests academic requirements tested by the other selection tools, the matriculation and the psychometric scores.

The study was longitudinal in nature and was conducted over the course of a three-year period, from the 2013/2014 to the 2015/2016 academic years.

Methodology

The study population

The study population regarding the first and the second research questions consisted of all the college's undergraduate students that are candidates for the teaching profession in three major Faculties (Education, Teaching Science and Teaching Humanities and Social Sciences). Admission data including matriculation and/or psychometric test scores were collected for all students from three cohorts: Cohort 1: students beginning their studies during the 2014/2015 academic year; Cohort 2: students beginning their studies during the 2015/2016 academic year; and Cohort 3: students beginning their studies during the 2016/2017 academic year.

The study population regarding the third research question consisted of students in the Faculty of Education, which is the college's largest faculty. For students who began studying in Cohort 1, grades were collected for the first and second years of study. For students who began studying with Cohort 2, grades were collected for the first year of study. No grades were collected for Cohort 3 because the study concluded prior to the end of the year.

Table I presents candidates' data for the admission parameters for the years 2014–2017.

Table I reports that the average matriculation and psychometric grades remained comparable across the three cohorts whilst concurrently reflecting a rise in standard deviation.

At the same time, a decline on average of the interview scores can be seen and a decline regarding the standard deviation.

Tools: the admission interview

The interview tool was formulated based on the relevant literature as well as the previous tools that had been used by the different departments in the three faculties. Its uniqueness lies in the fact that it incorporates group as well as individual elements, and has core and optional components to make it adaptable to the college's diverse array of departments. The tool contains six core components and six optional components. The components address different mainly non-cognitive aspects of the candidates that are not addressed in the other tools in use.

There are six core components: motivation and sense of educational mission; oral expression; written expression; interpersonal communication; presence; and reading skills.

There are six optional components open to the department's decision. The department's head with the department's staff can choose the components they think that are suitable to their department. The optional components include: maturity; curiosity and desire to learn; creativity; reflective ability; planning, discretion and flexible thinking; and demeanor.

Some of the components are addressed in the group section of the interview, for example, "interpersonal and social communication," while some components are addressed in the individual section, e.g. "written communication," "writing expression" and "reading skills."

The score awarded for each component range from 0 to 100. The candidate's final score is the average of the components specified for the candidate (six core components + the selected optional components). It is important to point out that an attempt was made to build a profile for each candidate while giving different weights to each component. Unfortunately, the profile did not have any added value over the average, as the grades for each component are usually very high and with small range.

Table II presents the measures for candidate assessment addressed by the new interview tool.

The tool's implementation

A majority of the college's departments in the three faculties conduct a 1.5–3.5 h interview which includes the individual as well as the group parts. Interview mediated by at least two staff members and a maximum of 12 candidates. The interview takes place after the candidates other selection tool's grades (matriculation and/or psychometric test scores) are sent to the admission office of the college, therefore it is the last stage of the selection process. Most of the candidates have had fulfilled the cognitive admission criteria and have had achieved the required matriculation and/or psychometric score. Some candidates received borderline scores.

Cohort	Matriculation score	Psychometric score	Interview score
(1) 2014/2015	$n = 291$	$n = 250$	$n = 389$
	$X = 93.95$	$X = 547.07$	$X = 89.23$
	SD = 6.52	SD = 70.95	SD = 7.38
(2) 2015/2016	$n = 461$	$n = 457$	$n = 633$
	$X = 93.91$	$X = 552.05$	$X = 86.43$
	SD = 6.62	SD = 75.32	SD = 9.17
(3) 2016/2017	$n = 479$	$n = 185$	$n = 416$
	$X = 93.93$	$X = 558.69$	$X = 85.66$
	SD = 6.36	SD = 67.85	SD = 10.60

Table I.
Admission criteria for
education candidates
for the three cohorts

Table II.
The measures for
candidate assessment
addressed by the new
interview tool

Core components	Suggested optional components
<p>Motivation and sense of educational mission: desire to work as a teacher in the education system; desire to influence and effect change; affinity for working with children; values and conceptions in the field of education; social involvement</p> <p>Oral expression: proper language; richness of language; appropriate style (minimal use of slang and “meaningless” words); coherence; clear and precise message conveyance; rhetorical ability; basic arguing skills</p> <p>Written expression: clear message conveyance; grammatically and linguistically proper language; rich language; high register of wording and formulation</p> <p>Interpersonal communication: verbal and non-verbal communication; attentiveness to others; integration into a discussion; relevant responses; contribution to the discussion; cooperation as part of a team</p> <p>Presence: ability to speak before an audience; intonation; posture; trusting body language; ability to voice opinions and to hold one’s own</p> <p>Reading skills: speed; accuracy; adapted reading indicating understanding of the material</p>	<p>Maturity: ability to define goals; preparedness for studying; desire to work hard</p> <p>Curiosity and desire to learn: intellectual curiosity; desire and ability to expand knowledge and areas of interest</p> <p>Creativity: capacity for self-expression using artistic tools</p> <p>Reflective ability</p> <p>Planning, and discretion</p> <p>Demeanor: pleasantness; friendliness</p>

The interviews involved several personal and group activities and not only served as a selection tool, but also as a means of presenting the college to potential candidates and facilitating staff involvement in, and commitment to, the selection of potential students.

The interviewers

The interviewers were senior staff members and the Heads of the departments who have had experience conducting group as well as individual interviews. Some of them were “pedagogical experts” that accompanied the students at their school experience. Annually, the Heads of department and the other interviewers prepare for the interviews adjusting and improving them by looking again especially at the optional components and at the interview structure. The preparation of staff members to be interviewers is conducted in a workshop during April of each year, prior to the beginning of the interview process. The aim of the workshop is to ensure all interviewers understand the components of the interview and that they are looking at the same elements that might provide information regarding the components. However, as the interview, unlike the other admissions tools, is not accurate but rather subject to interpretation, there are still differences between different interviewers.

The interview process

The interview process combines group and individual activities. The interview activities are unique to each department and are also derived from the interview components, the core components that are common and the optional for the decision of each department. The group part include activities such as a self-introduction from a third party’s point of view chosen by the candidate; a selection of a poems or stories by two to three candidates and their presentation to the group in a creative way; and a discussion regarding a topic raised by the interviewers. The individual part includes reading and written tasks. During the interview, each interviewer is tasked with writing notes and grades their assessment of the different interview components for each candidate. At the end of each interview, the interviewers

collectively discuss and summarize their impressions of the candidates. The discussion allows them to see a larger picture of each candidate and strengthens the quantitative inter-related reliability between judges (Libman, 1999). In the case of disagreement, the candidate attends another individual interview usually with the head of the relevant department.

Variables

The following background information was collected from candidates of the three faculties: National ID number, gender, age, registered faculty and department/specialization, average matriculation score (range: 70–120), psychometric exam score (range: 200–800), score on each of the interview components and final interview score (calculated as the average of the core and the selected optional components of the interview).

Additionally, information was collected regarding the enrolment status of each candidate whether he or she were accepted, rejected or accepted in a “special status” (Conditional acceptance for borderline candidate), and if the accepted candidates eventually enrolled to the college. Information was also collected regarding student grades only from the faculty of education as it is the largest faculty in the college and the information was available to the researchers. These grades including the average grade for the year, field-practice grades, grade in pedagogical instruction and grades in various classes that were taught in all the three faculty’s various departments.

Processing the data

The information was processed quantitatively using descriptive as well as inferential statistics while addressing diverse comparisons, including comparisons between different statuses of candidates; between admission measures: the matriculation scores, psychometric scores and the new interview tool’s scores; and between these scores and students’ grades. All of these aspects were also compared among the three cohorts.

The research process

Data regarding the first and the second research questions were collected with the assistance of the college’s Student Administration Center. Data regarding the third research question were collected with the assistance of the Faculty of Education Administration.

Results

Findings will be presented according to the three main research questions.

The ability of the interviewers using the new tool to distinguish between candidates of different academic status

In order to improve the new tool, this aspect was examined separately with regard to each component of the new interview tool, as well as with regard to the final interview score. The new tool has six core components and six optional components to be chosen by the different departments in the three faculties. First, differences identified by the interview’s components will be presented.

Differences identified by the interview’s components. The differences regarding each component at the three Cohorts looked at two groups of candidates: “accepted enrolled candidates” and “other candidates”. Table III presents the findings regarding all three Cohorts.

Findings regarding the first Cohort demonstrate statistically significant differences between “accepted enrolled candidates” and “others,” in favor of the first group regarding five out of the six core components: “Oral Expression,” “Written Expression,” “Interpersonal Communication,” “Presence” and “Writing Skills.” No statistically significant differences emerge regarding the core component: “Motivation and Sense of Educational Mission.”

Component	Cohort 1 (2014/2015)			Cohort 2 (2015/2016)			Cohort 3 (2016/2017)		
	Enrolled	Not	<i>t</i> -test	Enrolled	Not	<i>t</i> -test	Enrolled	Not	<i>t</i> -test
	students	enrolled		students	enrolled		students	enrolled	
	<i>n</i> <i>X</i> (SD)	<i>n</i> <i>X</i> (SD)		<i>n</i> <i>X</i> (SD)	<i>n</i> <i>X</i> (SD)		<i>n</i> <i>X</i> (SD)	<i>n</i> <i>X</i> (SD)	
<i>Core components</i>									
Motivation and sense of mission	273 91.89 (6.52)	101 90.46 (9.60)	1.64	377 91.98 (8.29)	74 88.10 (13.02)	3.29**	302 92.10 (8.47)	108 85.50 (14.02)	4.59***
Oral expression	281 90.14 (7.70)	102 86.57 (10.32)	3.63***	379 88.33 (10.80)	74 84.18 (14.78)	2.82**	304 87.25 (10.98)	110 76.86 (15.80)	6.36***
Written expression	257 88.17 (8.11)	88 83.63 (11.55)	4.03***	353 84.98 (11.28)	68 79.19 (15.00)	3.65***	299 83.32 (11.96)	106 72.95 (15.71)	6.19***
Interpersonal communication	264 90.01 (7.61)	92 86.97 (9.59)	3.05**	361 87.67 (11.34)	67 81.86 (16.96)	3.52***	295 88.71 (9.81)	106 78.53 (16.16)	6.08***
Presence	209 90.16 (7.34)	74 86.08 (11.36)	3.54***	288 91.16 (8.09)	58 86.89 (12.66)	3.29***	290 88.25 (11.19)	106 78.11 (16.07)	5.98***
Reading skills	125 90.48 (7.92)	42 84.83 (17.22)	2.87**	362 86.53 (12.84)	67 81.86 (14.40)	2.68**	137 86.24 (12.87)	54 73.24 (18.14)	4.80***
<i>Optional components</i>									
Maturity	235 91.48 (7.52)	86 89.25 (10.15)	2.12*	214 91.75 (7.15)	31 87.58 (13.71)	2.62**	185 91.18 (10.14)	63 77.14 (19.12)	5.56***
Curiosity	191 91.70 (10.89)	67 89.20 (10.92)	1.61	75 88.80 (6.14)	10 82.00 (10.59)	2.98**	183 91.63 (8.94)	66 80.37 (16.67)	5.22***
Creativity	93 88.67 (14.39)	31 84.61 (10.61)	1.44	169 88.20 (8.85)	18 82.80 (14.97)	2.93*	20 94.00 (7.36)	8 75.00 (7.55)	6.05***
Reflective ability	148 89.19 (7.71)	53 84.43 (14.92)	2.94**	98 87.00 (11.44)	12 82.51 (10.77)	1.30	170 87.78 (12.79)	61 73.77 (19.44)	5.26***
Planning and judgement	61 90.19 (6.83)	19 84.10 (21.50)	1.94	132 88.42 (9.19)	21 86.00 (14.37)	1.05	52 87.98 (11.16)	12 77.50 (14.84)	2.74**
Demeanor	206 92.63 (6.61)	80 90.72 (12.07)	1.70	229 93.54 (7.45)	38 87.91 (10.50)	4.02***	173 92.94 (8.28)	53 83.58 (16.39)	4.00***

Notes: **p* < 0.5; ***p* < 0.01; ****p* < 0.001

Table III.
Differences between
enrolled students and
“others” identified by
interview components
for each cohort

Statistically significant differences between the two groups were also observed regarding two out of the six optional components: “Maturity” and “Reflective Ability.”

In the second and third Cohorts, statistically significant differences between the two groups were observed regarding all the core components. In the second Cohort, statistically significant findings identified regarding four out of six optional components: “Maturity,” “Curiosity and Desire to Learn,” “Creativity” and “Demeanor.”

In the third Cohort, all the components, core and optional, had statistically significant differences between the two groups under examination: “accepted enrolled candidates” and “others.”

Differences identified by the interview average score. In addition to the scores on each component, a final interview score for each candidate was also calculated. The candidate's final score is the average of the components specified for the candidate (core components and the selected optional components chosen by the department the candidate applied to).

The differences regarding the final interview score at the first Cohort looked at the two groups ("accepted enrolled candidates" and "other candidates"). Following the analysis of the data after the first Cohort, regarding two groups of candidates, we assessed the finding to be insufficiently informative as they do not faithfully represent the actual situation of four academic statuses. As a result, the scope of investigation regarding the final interview score for Cohorts 2 and 3 (2015/2016 and 2016/2017) was refined to include four statuses of candidates: "accepted enrolled candidates," "accepted enrolled candidates in special status (borderline candidates)," "rejected candidates" and "accepted candidates who chose not to enroll."

As a result, a *t*-test for independent samples was conducted for Cohort 1 (2014/2015). Regarding the second and the third Cohorts, in order to look at differences between four groups of candidates, ANOVA test and *post hoc* Scheffe's contrasts were carried out. Findings regarding the interview average score and the other admission tools are presented in Table IV.

Table IV indicates the existence of statistically significant differences among the different statuses of candidates in all cohorts regarding all admission measures: the matriculation score, the psychometric score and the new interview tool's final score.

Statistical differences were found in Cohort 1 (2014/2015), between two groups of candidates: "accepted enroll candidates" and "others" with regards to all three admission tools in favor of the "accepted enroll candidates."

For Cohort 2 (2015/2016) and Cohort 3 (2016/2017), statistical differences were found regarding all the admission tools between the four groups of candidates: "accepted enrolled candidates," "accepted enrolled candidates in special status (borderline candidates)," "rejected candidates" and "accepted candidates who chose not to enroll." A *post hoc* Scheffe's test was conducted to identify the source of the differences among the four groups.

As for the matriculation and psychometric scores, in Cohort 2 (2015/2016) and in Cohort 3 (2016/2017), no statistical significance was found between "accepted enrolled candidates" and "accepted candidates who chose not to enroll." No statistical significance was found between "rejected candidates" and "accepted enrolled candidates in special status." The statistically significant difference stems from the differences between "accepted candidates," enrolled and not enrolled (groups 1 and 4) and two other groups: "accepted enrolled candidates in special status" (group 2) and "rejected candidates" (group 3). In other words, as for the matriculation and the psychometric scores, no statistically significant difference were found between "rejected candidates" and "accepted enrolled candidates in special status," the borderline candidates.

In terms of the final score of the admission interview, no statistically significant differences were found within the two Cohorts (2 and 3) among "accepted enrolled candidates" (group 1), "accepted enrolled candidates in special status" (group 2), and "accepted candidates who chose

Admission tools	Cohort 1 (2014/2015)	Cohort 2 (2015/2016)		Cohort 3 (2016/2017)	
	<i>t</i> -test (2 groups)	F-ANOVA (4 groups)	Scheffe	F-ANOVA (4 groups)	Scheffe
Matriculation score	2.52**	17.61***	1, 4 > 2, 3	24.90***	1, 4 > 2, 3
Psychometric score	3.67***	25.72***	1, 4 > 2, 3	9.86***	1, 4 > 2, 3
Interview final score ^a	3.52***	11.84***	1, 2, 4 > 3	48.45***	1, 2, 4 > 3

Notes: ^aThe admission committee average takes into account only indicated measures, which include core and selected optional measures. ** $p < 0.01$; *** $p < 0.001$

Table IV.
Comparison between
cohorts regarding
admission tools

not to enroll” (group 4). The statistically significant difference with regard to the final interview score is between “rejected candidates” (group 3) and all others.

Moreover, when conducting a *post hoc* Scheffe’s test looking only at the admission stage having three groups of candidates (“accepted candidates,” “accepted candidates with special status” and “rejected candidates”), the interview final score was the only admission tool that distinguishes between accepted candidates, whether with or without special status (groups 1 and 2), and rejected candidates (group 3). The other admission tools, matriculation and psychometric, distinguish between “accepted enroll candidates” (without special status – group 1) and others (“accepted with special status”– group 2 and “rejected candidates” – group 3). When looking at the second admission stage (where the decision is done by the applicant), we found differences in all the admission tools. The differences between “accepted candidates” who chose to enroll and “accepted candidates who chose not to enroll” were found to be in favor of the last group. However, the differences were of no statistical significance.

The interview’s added value

The added value of the admission interview regarding the prediction of whether or not the candidate will study at the college was assessed by means of a logistic regression. The regression model considered all possible predictive factors. The predicted variable is whether the candidate will eventually enroll in the college or not. Although additional variations were considered in this model, the predictors that were selected generated the greatest overall contribution. Table V presents the findings.

The findings presented identify the admission interview as the only statistically significant predictor of enrollment in the college. Candidates who pass the interview have a 1.34 chance of being accepted to the college. The predictive regression model was found to be statistically significant ($R^2 = 0.186$, $X^2_{(4)} = 21.95$, $p < 0.001$). The percentage of explained variance was 18.6 percent, and 87.3 percent of those checked were correctly classified using the model.

The interview’s capability in predicting student grades

The interview’s predictive validity regarding student grades was assessed by means of a linear regression for each of the cohorts for which student grades were collected, meaning Cohort 1(2014/2015) and Cohort 2(2015/2016). This process was conducted only for the Faculty of Education, as the largest faculty in the college and due to the availability of information to the researchers.

Initially, a correlation between the variables was assessed to confirm the absence of multiple-correlation. A relatively high correlation was found between the psychometric score and the matriculation score (0.277, $p < 0.01$). The correlation between the interview score and the other variables were also statistically significant, but less pronounced (with matriculation 0.088, $p < 0.05$; with psychometric 0.248, $p < 0.01$).

It was decided to incorporate the following predictors into the regression equation: matriculation score, psychometric score and the new interview tool final score. Table VI is

Table V.
Results of logistic regression to predict enrollment or non-enrollment

	Non-standardized regression coefficient <i>B</i>	Standardized error of regression coefficient SE	Wald (df = 1)	Exp (<i>B</i>)	95% confidence interval
Interview score	-0.089	0.024	13.38***	0.914	0.95-1.07
Psychometric	-0.002	0.004	0.131	0.998	0.99-1.00
Matriculation	0.007	0.030	0.050	1.00	0.95-1.07
Constant	7.71	3.45	4.97*	2,242.47	

Notes: * $p < 0.05$; *** $p < 0.001$

Table VI.
Regression results
for Cohort 1
(2014/2015) and
Cohort 2 (2015/2016)

Predicted scores	<i>n</i>	Admission criteria	Stage of entry	Marginal contribution R**2	Mutual contribution	<i>F</i>
First-year field practice	260	Interview score	1	0.17***	0.171***	26.30***
Second-year field practice	228	Interview score	1	0.057	0.048	6.43**
First-year average	280	Psychometric score	1	0.198	0.192	33.97***
		Interview score	2	0.246	0.235	22.40***
Second-year average	255	Psychometric score	1	0.103	0.096	14.43***
Sociology	250	Matriculation score	1	0.119	0.112	16.13***
		Psychometric score	2	0.164	0.150	11.57***
Philosophy	255	Psychometric score	1	0.094	0.086	12.73***
		Matriculation score	2	0.128	0.114	8.99***
Psychology	261	Psychometric score	1	0.180	0.174	28.11***
		Interview score	2	0.211	0.199	17.02***
Language	234	Psychometric score	1	0.094	0.087	12.36***
Quantitative research	232	Psychometric score	1	0.240	0.233	35.71***
Qualitative research	215	Psychometric score	1	0.039	0.030	4.24*

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

an account of stepwise regression findings, each regarding a different predictive variable. The predictive variables include student grades, as described in the Methodology section.

The new interview tool constitutes a significant component and a sole forecaster in the regression model that is predictive primarily of students' first year, as well as second-year, field-practice grades. The regression equation found that the new interview tool used by the admission committees explains 20 percent of the explained variance in students' first-year field-practice grades.

The interview seems to have an effect mostly for borderline candidates. Therefore, we decided to look at the grade differences between "enrolled students" and "enrolled students with special statuses" (the borderline candidates). We found all differences to be statistically significant in favor of enrolled students with no special status with the exception of the field-practice grade. This finding reinforces the fact that the interview provides a unique opportunity to borderline candidates to enroll especially in non-classic academic parameters, as will be discussed in the summary and discussion.

Summary and discussion

The interview, group as well as individual, is one of the most common selection tools used in the admission of candidates for academic study, particularly in the applied professions, including teacher-training. One of its goals is to predict abilities that are not assessed by other common selection tools such as the capacity for interpersonal communications, empathy and maturity (Wilson *et al.*, 2012; Pau *et al.*, 2016).

The aim of this study was to assess the quality of a new interview tool for the selection of candidates for the teaching profession. The incentive was to develop a more valid tool that offered added value the other standard selection tools, the matriculation and the psychometric.

The study's findings are encouraging. The usage of the new interview tool improved the selection procedure of qualified candidates, especially borderline candidates who would be rejected if using only the matriculation and the psychometric admission tools.

A logistic regression model revealed the admission new interview tool to be the sole statistically significant predictor of enrollment in the college, indicating that candidates who passed the admission interview had a 1.34 chance of being accepted. The percentage of explained variance was almost 20 percent, and approximately 90 percent of those examined

were correctly classified using the model. In addition, the study reported the interview score to be the sole statistically significant predictive factor in the model that forecasts student field-practice grades, particularly in their first year of study. The percentage of explained variance between student field-practice grades and interview scores was 20 percent, which is consistent with the similar findings presented in the theoretical background. The employment interview was found to possess a predictive capacity for non-academic parameters such as interpersonal communications, empathy, maturity, creativity, involvement, curiosity and more (Wilson *et al.*, 2012; Pau *et al.*, 2016). Similar findings were found regarding medical school candidates, for whom interview scores corresponded more closely with clinical experience than other selection tools (Wilson *et al.*, 2012).

It is hoped that over time, interviewers using the new interview admission tool will develop a deeper understanding of its strengths, particularly its capacity to evaluate non-academic aspects of candidates that cannot be assessed by means of the common selection tools, and will accumulate experience assessing candidates while using it and, eventually, the percentage of explained variance would increase. It is important to emphasize that similar to other colleges and universities globally, the grade range within the college is relatively narrow because of the grade inflation underway within academia (Grade Inflation.com). This undoubtedly affects the research results, decreasing the overall explained variance. Nevertheless, even if the grade range increases, there are probably other factors that are not represented in the selection tools. Therefore, even if the selection tools are excellent, they are still not capable of precise a high prediction of student achievements. Yet, admission interviews, in general, and the tool considered in this study in particular, have been found to have a statistically significant advantage in predicting student field-practice grades that reflects non-academic abilities and skills which have been found to be important in the study of many applied professions.

The impact of the score of the new interview tool on the selection process is impressive. This study Findings indicates that no statistically significant difference regarding the matriculation and psychometric test scores was found between accepted candidates who chose to enroll and accepted candidates who chose not to enroll to the college, as well as between candidates enrolled on a special status and rejected candidates. However, with regard to the admission interview score, statistical differences immersed between rejected candidates and others. Amongst those candidates who did not meet the criteria of the matriculation and psychometric scores, the interview enabled identification of the borderline candidates who could be accepted only in light of their non-academic qualities. This information further corroborates the fact that the new interview admission tool added value in comparison to the other tools and allows a more in-depth and well-based discussion about exceptions and candidates who do not meet the strict grade admission requirements. This finding is important in light of literature which indicate that there is not necessarily a connection between traditional standardize admission requirements (the matriculation and the psychometric scores) and student performance. Students who do not meet these admission requirements may still succeed in academic study as a result of other skills (Ben-David and Shaor, 2012; Davidovitch and Soen, 2015; Haimovitch and Ben Shahar, 2004; Yogev and Ayalon, 2000).

It can be recommended to continue using the new admission interview in selecting candidates to the college in addition to the matriculation and psychometric scores – as the usage of a variety of tools increases the likelihood of accepting worthy candidates, especially borderline candidates that can be missed (Holden and Kitchen, 2017). In professions that emphasize personal (and not just academic) qualities, such as teaching, it is important to examine personal traits. It is also important to give opportunities to candidates with potential but who, for different reasons, do not do well in standardized tests (such as people with dyslexia or attention deficit disorder). Standardized testing excludes them. It is also

recommended to constantly strive to monitor and improve the new interview tool while making efforts to achieve compatibility among the college's tools for evaluating non-academic aspects, such as field practice.

Finally, candidates who were accepted and chose not to enroll have higher grades in the admission tools than candidates who were accepted and chose to enroll. The differences are not statistically significant; however, indirectly, it might present the state of teacher profession in Israel, an issue that needs to be addressed.

Considering the additional goals the interview provides, it is important that the interviews conducted to select qualified candidates be dealt within the institutions themselves to ensure that they reflect the educational ethos of the institute (Scriven, 1990). It is recommended that the interviews be formulated and conducted in the colleges as opposed to an outside body – a regulatory mechanism that can weaken the profession – even if their predictive capacity might initially be limited (Libman, 2009).

Note

1. Due to the unique selection procedure implemented by the Faculty of Arts, this faculty did not use the tool.

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Dog-assisted intervention at a Spanish university: pilot study

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Abstract

Purpose – Dog-assisted interventions (DAIs) are conducted by universities around the world as innovative methods that improve students' quality of life. The purpose of this paper is to assess the DAI program's effect on the stress levels, well-being and social skills of first-year students from different degree programs at Complutense University of Madrid (UCM).

Design/methodology/approach – The study was conducted with 64 first-year students ($M = 19.20$, $SD = 1.57$). The intervention consisted of three weekly sessions of 1-h duration interacting with a therapy dog. The investigation followed a quasi-experimental pre-test/post-test design with measures of attitudes toward DAI, perceived stress, well-being and social skills.

Findings – The results indicated significant improvements in all studied variables.

Research limitations/implications – This study presents some limitations. In the design, the authors lack a control group. Another limitation is related to the sample, which was small. The authors also acknowledge that only one measure of each outcome variable was administered. Likewise, during the interventions, external observations should be added that generate qualitative records focused on student–dog interactions. In addition, physiological measures of stress, such as cortisol levels, should be included in the analysis to further support the obtained results. Nevertheless, as this was a pilot study, future investigations should aim to create a program using a larger sample of both participants as well as and dogs, with a linear/longitudinal design to measure both the mid- and long-term effects.

Practical implications – In addition, this pilot study was implemented to assist in the validation and adjustment of the DAI program for UCM students.

Social implications – By using a DAI program, college students have had the opportunity to reduce their stress and develop their social skills, as well as improve their quality of life as individuals and students. Although the implementation of Compludog was small, it was also promising as a pedagogical practice at UCM.

Originality/value – It was applied for the first time in a Spanish university and provided access to therapy dogs within this context.

Keywords Higher education, Well-being, Students, Stress, Animal-assisted intervention, Dog

Paper type Case study

Introduction

Beginning university imposes a significant level of stress on many students. Stress levels among university students tend to be higher during their first year (Besser and Zeigler-Hill, 2014) and prior to examination periods. This is probably caused by them leaving their support systems, such as family and pets (Durand-Bush *et al.*, 2015; Regehr *et al.*, 2013; Terry *et al.*, 2012).

High stress levels have a negative effect on well-being (Gartland *et al.*, 2014), personal emotional state and interpersonal relationships (Feldman *et al.*, 2008). In addition, stress has a negative influence on academic performance (Akgun and Ciarrochi, 2003; Pritchard and Wilson, 2003; Struthers *et al.*, 2000), affecting cognitive, behavioral and

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physiological development (Balanza *et al.*, 2009; García-Ros *et al.*, 2012). In addition, studies show apposite relationship between the student's well-being, academic performance perception of the university environment (De Vibe *et al.*, 2013; Hinrichs *et al.*, 2016) and lower dropout rate (Canales and De los Ríos, 2018). Therefore, many professionals consider it is essential that educational institutions design and implement programs to relieve stress (Berrío and Mazo, 2011) and to promote well-being as a way to improve education's quality (Salami, 2010). Unfortunately, there are few research works focused on well-being (Ryan and Deci, 2001). Therefore, the education system could benefit from the inclusion of pedagogical agents beyond the transmission of academic content (Pegalajar and López-Hernández, 2015). Our relationship with animals, specifically dogs, has been evolving and developing for approximately 14,000 years (Janssens *et al.*, 2018). Dogs have performed hunting, protection, transportation and companionship tasks. However, "the role of dogs in society is changing" (Binfet and Struik, 2018, p. 2). New interaction methods began appearing between the late nineteenth and early twentieth centuries, reaching a special interest during the 1970s (Martínez, 2008). These methods are currently known as dog-assisted interventions (DAIs).

DAIs are defined as animal support provided through professional interventions (Cusack, 2008) with the purpose of achieving physical, cognitive, social and/or emotional improvements (Cifuentes and González, 2005). These kinds of interventions have become prevalent in modern Spanish society. However, it was not until the twenty-first century that DAIs began to be used in different contexts in this country (Martos-Montes *et al.*, 2015).

During the last few years, DAI programs have been incorporated into higher education environments with the goal of improving students' quality of life, as an alternative to psychological and educational therapies and interventions focused on symptom-removal or self-control strategy development (Crossman *et al.*, 2015). Interacting with therapy dogs seems to have a positive influence on the student's well-being and stress levels, also improving other aspects related to the integration into the university environment. Furthermore, as Barker, Barker and Schubert (2016) and Barker, Barker, McCain and Schubert (2016) commented, DAI programs are a tool for higher education institutions to increase their popularity and improve their image (Binfet *et al.*, 2016).

Institutions that have implemented programs with animals, usually dogs, in their facilities have generated high interest and positive responses among students (Bell, 2013; Brown *et al.*, 2016; Lannon and Harrison, 2015). Some examples are the University of British Columbia and Dalhousie University in Canada; the University of Bristol and University of Central Lancashire in the UK; and Emory University, Kent State University, University of Massachusetts, as well as Harvard and Yale Universities in the USA. Moreover, these programs have been shown to reduce stress and anxiety (Banks *et al.*, 2018; Barker, Barker and Schubert, 2016; Barker, Barker, McCain and Schubert, 2016; Binfet *et al.*, 2016; Bjick, 2013; Crossman *et al.*, 2015), improve interpersonal interactions (Binfet *et al.*, 2016; Camaioni, 2013) and increase subjective well-being (Binfet and Passmore, 2016; Crossman *et al.*, 2015; Picard, 2015). Therefore, programs that offer the chance for interactions between students and animals, usually dogs, are increasing in popularity and prestige among higher education institutions for their proven positive effects on student well-being and stress levels (Binfet and Passmore, 2016). According to Binfet and Struik (2018), "the role of dogs on college campuses perhaps reflects the public's appetite to share space with canines but also reflects the increased recognition of the utility of therapy dogs in supporting students' social and emotional well-being" (p. 2).

Given the success of previously adopted programs (Barker, Barker and Schubert, 2016; Barker, Barker, McCain and Schubert, 2016; Binfet and Passmore, 2016; Binfet *et al.*, 2016; Bjick, 2013; Camaioni, 2013; Crossman *et al.*, 2015; Picard, 2015), we designed a pilot study

involving a DAI in a Spanish university for the first time. We evaluated the program's effects on three domains: stress levels, social skills and subjective well-being. Additionally, we assessed the possibility of providing easy access to therapy dogs and the student's reaction to this intervention.

Methods

Study objectives

The general objective of the present study was to design, implement and evaluate a DAI pilot program for first-year students from different faculties of the Universidad Complutense of Madrid (UCM). The following objectives were investigated:

- (1) to assess changes in students' attitudes toward DAIs after participating in the program;
- (2) to determine if significant differences in students' stress levels, social skills and perceived well-being can be observed after participation in the DAI program; and
- (3) to establish whether students' sociodemographic characteristics are related to the effects of the DAI program.

Study design and hypotheses

The present study utilized a quasi-experimental design, since it dealt with a controlled trial of a non-random stratified sample composed of four experimental groups. It included comparison measures for pre- and post-intervention, and no control group. The following hypotheses were formulated prior to beginning the investigation:

- H1.* Participation in the Compludog program will lead to significant differences in participant stress levels, social skills and subjective well-being after three DAI sessions.
- H2.* There will be significant differences in the participants' attitudes toward DAI programs after completing the three sessions.
- H3.* The results will not differ significantly according to students' sociodemographic variables.

Participants

The program was presented to 210 first-year students from the UCM. Of these, 148 registered in the study and 64 were randomly selected to participate. The students belonged to the Nursing, Chemistry, Education and Sociology faculties; they were mainly Spanish (85.9 percent), largely identified as female (89.1 percent) and between 18 and 24 years old ($M = 19.20$; $SD = 1.57$). Additionally, 46.9 percent of the participants attended the morning shift, 59.4 percent were scholarship holders, 20.3 percent had part-time jobs, 12.5 percent were diagnosed with illness and/or disability and 79.7 percent had lived with a pet in the past.

None of the students met the exclusion criteria for participating in DAIs of allergy and/or fear to dogs (Zurita and Carrillo, 2010). All participants provided written, informed consent before participating in this study. The sample distribution consisted of an equal number of students from each of the four faculties. They worked in groups with colleagues from their same degree.

Instruments

To evaluate the program before and after the intervention, the following instruments were selected for their adaptation to the population, their validity and reliability. The variables

analyzed in this study included attitudes toward DAIs, stress, well-being and social skills. Below, the basic characteristics of the evaluation resources are presented:

- (1) Sociodemographic questionnaire (self-elaborated): this instrument was used to collect all necessary data for identification and demographic characteristics of the sample, such as age, gender, nationality, class shift, working or not during the academic year, illness and/or disability, holding a scholarship, and previous cohabitation with animals.
- (2) *Cuestionario de Actitudes ante las Intervenciones Asistidas por Perros* (Attitude Questionnaire for Dog-Assisted Interventions) (CAINTAP) (López-Cepero *et al.*, 2015): this instrument was used to evaluate positive and negative attitudes toward DAIs among the university students. The survey consists of 22 items, which are evaluated in a five-item Likert scale: strongly disagree, disagree, neither agree nor disagree, agree and strongly agree. This instrument was validated for students of different public universities in occidental Andalusia, with a reliability $\alpha = 0.879$ for positive attitude toward DAIs and $\alpha = 0.884$ for negative attitude (López-Cepero *et al.*, 2015).
- (3) *Cuestionario de Estrés Percibido* (Perceived Stress Questionnaire) (CEP) (Sanz-Carrillo *et al.*, 2002): this instrument quantitatively evaluates the recent (within the last month) individual perceived stress level. The questionnaire consists of 30 items valued in a four-item Likert scale 1 = hardly ever, 2 = sometimes, 3 = often and 4 = almost always. This instrument has good psychometric properties, with a reliability of $\alpha = 0.87$ for recent score (Aranda *et al.*, 2018).
- (4) *Cuestionario de Habilidades Sociales* (Social Skills Questionnaire) (CHASO) (Caballo and Salazar, 2017): this instrument evaluates social skills and their different dimensions. The questionnaire consists of 40 items, which are valued according to in a five-item Likert scale 1 = very uncharacteristic of me, 2 = uncharacteristic of me, 3 = moderately characteristic of me, 4 = characteristic of me and 5 = very characteristic of me. With a reliability of $\alpha = 0.88$, this questionnaire has good psychometric proprieties.
- (5) *Índice de Felicidad Permberton* (Pemberton Happiness Index) (PHI) (Hervás and Vázquez, 2013): this instrument quantitatively evaluates an individual's well-being. The index consists of 11 items that are valued in a ten-item Likert scale 1 = strongly disagree 10 = strongly agree. With a reliability of $\alpha = 0.89$, this scale has good psychometric proprieties (López-Gómez, 2018).

Compludog program

Based on previously validated DAIs, we designed the Compludog Program for UCM students. The program consisted of three 1-h intervention sessions, distributed throughout three consecutive weeks. A handler and training expert for DAIs coordinated, developed and evaluated the sessions. Both the program design and the bond formed by the handler and the dog were positively evaluated by the DAI firm Sentido Animal. Two intervention groups were created for each faculty (8 groups in total, $n = 8$ per group). In each group, the participants took shifts to interact with the dog, and were encouraged to interact with the other students in the meantime.

The first session was dedicated to introducing and establishing a secure and friendly environment. The second session was dedicated to helping the students acquire dog-related knowledge such as education, communication and skill training, through various games. The third and final session closed with the acquired knowledge, a relaxation activity was

performed in group and a photography session with the animal was held. The time, days and room of the sessions were kept consistent across groups.

The sessions' methodology was based on guided practice. That is, the dog's handler set the timing and the activities but gave the students decided whether to participate in the activities or not. The therapy dog was a neutered nine-year-old mixed-species male, with four years of experience as a co-therapist. He was a large-sized (over 30 Kg), chocolate-colored dog.

Procedure

First, permission was requested from the *Comité de Experimentación Animal* (CEA) and from the *Comité Ético Investigación Clínica* (CEIC-Hospital Clínico San Carlos) four months before the beginning of the study, and a positive answer was received. A month later, a permit to bring animals onto the university campus and to reserve the rooms for the study was requested from the Dean's and management offices of each faculty.

Once authorized by the administration, visits to the faculties were organized a month before the program to inform the students and proceed with the volunteer selection process. To take part in the program, the candidates had to be in their first year of a degree program in a collaborating faculty (sociology, education, nursing or chemistry); be under 25 years old; and have no allergies or phobias of dogs. The study was presented directly in first-year classes of the selected faculties and the participants were selected randomly between the interested people to access the program.

One week before the beginning of the program, an anonymous identification number was assigned to each participant and they signed the informed consent form. They also filled out the sociodemographic questionnaire and the pre-test was administrated for an hour. For three consecutive weeks, the program was carried out in the different faculties. Each group participated in three intervention sessions with the dog. The post-test was administered a week after the last intervention session in the same room where the sessions were held (Table AI). Dog's stress signals such as yawning, licking, freezing, walking slowly, etc. (Rugaas, 2005) were monitored by the handler before, during and after each session.

Data analysis

Statistical analysis of the equivalence and sample normality were tested. Pre- and post-intervention tests were analyzed using parametric (*t*-test) or non-parametric test, based on normality results. A relationship analysis was also performed between complementary variables and the intervention's effectiveness. A statistical significance value of $p < 0.05$ was assumed. All the data were analyzed using the SPSS 25.0 software for Windows.

Results

Equivalence between groups: homogeneity of variance

The results of Levene's test showed that the obtained *p*-value was not relevant in any case, since it was greater than 0.05 and, consequently, homogeneity of variance was assumed (Table I). Attitude toward DAIs did not maintain this homogeneity, so for its

Table I.
Homogeneity of
variance of the sample

		Stress (CEP)		Well-being (PHI)		Social skills (CHASO)	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Levene's statistic		2.303	0.365	0.728	0.147	1.078	1.148
Sig.		0.086	0.778	0.539	0.931	0.365	0.337

After verifying the variance's non-homogeneity of the sample for attitudes toward DAIs, the Wilcoxon's non-parametric test for two related samples (pre- and post-interventions) was used for its evaluation. As the value for both the positive and the negative attitudes toward DAIs was $p = 0.000$, the void hypothesis was rejected, and it was concluded that there was not enough evidence to confirm an improvement in attitudes toward DAIs after participation in the program. Therefore, $H2$ was confirmed after detecting significant changes in the students' attitudes toward DAIs.

Relationship between sociodemographic variables and the intervention's effects

Differences between the means' test (students' test) were applied for the complementary independent variables. In all cases, it was checked whether the test's t -value was greater than $\alpha = 0.05$ and, consequently, it was found that the gender, age, nationality, class shift, cohabitation with animals, working during the academic year and holding a scholarship variable had no direct influence on the intervention's results. Given that, no meaningful effect among the results was found for the sociodemographic variables, $H3$ was also confirmed.

Discussion

The current study described the design and examined results of a DAI program for first-year UCM students. For this purpose, the existing designs and methodologies of American universities were used as a starting point (Barker, Barker and Schubert, 2016; Barker, Barker, McCain and Schubert, 2016; Binfet and Passmore, 2016; Bjick, 2013; Brown *et al.*, 2016; Foreman *et al.*, 2019; Lannon and Harrison, 2015; Picard, 2015; Wood *et al.*, 2018) and adapted to the circumstances of our study (therapy dogs, rooms and participants).

The results of this pilot study show that the three-session DAI program produced positive effects among first-year students at the UCM. Particularly, we show that the intervention had a positive impact on the subjective well-being of the students, with a reduction of their stress levels and an increase in their social interactions (McNicholas and Collis, 2000). Regarding students' attitudes toward DAIs, we found a significant increase in positive attitudes together with a significant decrease in negative attitudes (Moreno, 2015). This is likely because the enrolled students already had positive attitudes toward DAIs (Foreman *et al.*, 2019). Moreover, most of the participants had already cohabitated with animals. Regarding the students' stress levels, similar results to previous studies were observed (Barker, Barker and Schubert, 2016; Barker, Barker, McCain and Schubert, 2016; Binfet *et al.*, 2016; Bjick, 2013; Crossman *et al.*, 2015). This confirms that DAIs on university campuses can provide options to assist in stress reduction. Our results also support previous findings on the benefits of this kind of intervention improving interpersonal relationships (Fine, 2014), as they are directly related to university students' social skills (Binfet *et al.*, 2016; Camaioni, 2013). Finally, several investigations relate DAIs to an improvement in students' well-being (Binfet and Passmore, 2016; Crossman *et al.*, 2015; Picard, 2015), a result that was also observed in this study.

Because high stress levels have a negative impact on students (Pritchard and Wilson, 2003; Struthers *et al.*, 2000), adopting a low-cost intervention program like Compludog that provides access to therapy dogs for 3h could be beneficial for the students' academic performance and quality of life (Granger and Kogan, 2006). Moreover, Compludog would offer an intervention tool integrated into the university curriculum as a pedagogical method, which could attract putative new students (Barker *et al.*, 2015). It can provide "a different approach in working on the same educational and social skills goals/objectives within a school setting" (Granger and Kogan, 2006, p. 273). In addition, our findings could provide teachers and higher education authorities an idea of how the Spanish university students perceive DAIs.

In this way, research contributes to the improvement of higher education (Daltry and Mehr, 2015).

Regarding students' attitudes toward DAIs, it was verified that a meaningful rise occurred for positive attitudes, as well as a significant decrease in negative attitudes (Moreno, 2015). This is likely because the enrolled students already had positive attitudes toward DAIs (Foreman *et al.*, 2019). Moreover, most of the participants had already cohabitated with animals.

Regarding the students' stress levels, similar results to previous studies were observed (Barker, Barker and Schubert, 2016; Barker, Barker, McCain and Schubert, 2016; Binfet *et al.*, 2016; Bjick, 2013; Crossman *et al.*, 2015), which confirms that DAIs on university campuses provide situations that can assist in stress reduction.

Based on these results, we support previous studies' findings which found that this kind of intervention can also improve interpersonal relationships (Fine, 2014) as they are directly related to university students' social skills (Binfet *et al.*, 2016; Camaioni, 2013).

Finally, several investigations relate DAIs to an improvement in students' well-being (Binfet and Passmore, 2016; Crossman *et al.*, 2015; Picard, 2015), a result that was also observed in this study.

This is a low-cost intervention and the results suggest that providing access to therapy dogs for 3 h can improve university student's quality of life. This in turn could help students be better students and provides information to university administrations on the ease of implementation of the canine visits as a means to increase the welfare of university community.

Nevertheless, it was not possible to quantitatively demonstrate the students' and university's positive perception of this kind of program (Bell, 2013; Brown *et al.*, 2016; Lannon and Harrison, 2015). However, some evidence of this was visible, such as the high interest in the program from both faculty members and students in participating in a DAI program, because all faculties questioned cooperated and 70.47 percent (148 of 210) of students wanted to participate. Neither sociodemographic variables included in this study showed any kind of effect on the results (Demello, 1999; Somerville *et al.*, 2008).

Contributions, limitations and further studies

Although innovative, our study presents some limitations. For instance, its design; although the pre-/post-intervention results were compared, we lack a control group. This design is commonly used to evaluate programs' effectiveness when it is difficult to obtain a random sample (Stewart-Brown *et al.*, 2011). Thus, it cannot be assumed that the observed changes are completely attributable to the intervention, since all variables that could influence the results cannot be controlled.

Another limitation of the present study is related to the sample. The sample was small and non-representative of the total student sample (30.47 percent), and there was "a disproportionate presence of females in comparison to males" (Dell *et al.*, 2015, p. 353). However, our sample size fell within the acceptable ranges for a pilot study. Also, the group size was small ($n = 8$), but we considered that larger groups would have impeded direct interaction with the dog, and therefore, the effects of the DAI.

We also acknowledge that only one measure of each outcome variable was administered. Therefore, possible distortions could arise when self-reporting data were collected. Likewise, during the interventions, external observations should be added that generate qualitative records focused on student-dog interactions (González-Ramírez *et al.*, 2016), and sessions should be recorded for later analysis using qualitative software. This will complement and provide further details about the obtained data through the questionnaires. In addition, physiological measures of stress, such as cortisol levels, should be included in the analysis to further support the obtained results.

Implementing a DAI program can be an effective way to address some of the students' current problems such as stress. Some research argues for implementation of group programs that provide support to multiple students at the same time (Regehr *et al.*, 2013). Also, if the intervention is administered collectively, it allows us to increase the level of social skills. On the other hand, the basic resources needed are an ordinary classroom empty of chairs, therapy dogs and their handlers and blankets for the floor.

By using a DAI program, college students have had the opportunity to reduce their stress and develop their social skills, as well as improve their quality of life as individuals and students. Although our implementation of Compludog was small, it was also promising as a pedagogical practice at UCM. Therefore, we believe that Compludog could make a difference in student success "that help contribute to optimal learning and mental wellbeing" (Binfet, 2017, p. 410). Additionally, implementing this program could represent an opportunity as a transformative experience for Spanish universities, as they can begin to understand the value of Nevertheless, as this was a pilot study, future investigations should aim to create a program using a larger sample of participants as well as dogs, with a linear/longitudinal design to measure both the mid- and long-term effects. The required time for human-animal potential benefits to be observed can be minimal (Wood *et al.*, 2018), so the number of sessions and their duration would be restricted. Additionally, future investigations should study the relationship between well-being and academic performance through DAIs, as other authors have already done (Carranza *et al.*, 2017; Velásquez *et al.*, 2014). Also, other analyses to verify the influence of the sample on the results should be performed. For instance, mixed groups composed of students from different academic disciplines (sciences, social sciences, health sciences, humanities, etc.) should be created to foment interfaculty relationships. Second, personal information covering in greater detail the participant's history (i.e. current or past cohabitation with a dog or a similar animal) should be included as confounding variables in the analysis. Lastly, a random student sample should be used to test the influence of previous attitudes toward DAIs.

Conclusion

In conclusion, Compludog program can be considered a valuable intervention for UCM, as it was shown to improve students' quality of life. Using therapy dogs on a university campus can help to student success through interaction with a therapy dog, students may improve their motivation levels. Also, following the evidence presented before, this interaction could lead to positive learning results. "Given the level of stress during examination periods and the importance of strong academic performance during this time, the inclusion of canine interaction periods on college campus may be beneficial for students" (Banks *et al.*, 2018, p. 11). Finally, it would raise positive awareness of DAIs, as shown in our study in the UCM, the first Spanish university to implement a program of this kind. The DAI program has shown to have the potential to reduce stress levels and improve the social skills of first-year university students. The application of the program in a larger sample is proposed and its comparison with a control group to see the differential effects.

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Appendix

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Program and therapy dog validation	X	X																		
CEA permission		X	X																	
Dean's office permission				A	B	C	D													
Faculty visits and participant recruitment									A	B	C	D								
Administration of pre-test measures and completion of informed consent													A	B	C	D				
Session 1: introductions and climate building														A	B	C	D			
Session 2: dog-related knowledge via games															A	B	C	D		
Session 3: group relaxation activity and photography session																A	B	C	D	
Administration of post-test measures																	A	B	C	D

Table A1.
Procedure timeline

Notes: X = all groups; A = Group 1; B = Group 2; C = Group 3; D = Group 4

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Analysis of the attrition phenomenon through the lens of university dropouts in the United Arab Emirates

Attrition
phenomenon

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Abstract

Purpose – Theoretical models of attrition have failed to address the interwoven factors from the perspective of undergraduate students that influence their decision to drop out. The purpose of this paper is to unravel these complexities using a qualitative phenomenological approach to gain systematic descriptions of the experience of non-completion.

Design/methodology/approach – Tinto's (2004) and Bean and Metzner's (1985) models serve as the theoretical construct for the study's design and analysis. In-depth interviews were conducted with 41 students who discontinued studies at universities in the United Arab Emirates, to understand the situations that led them to drop out of university and how they experienced this event in their lives.

Findings – Several issues were identified as contributing factors for dropping out that are consistent with those found in the international literature. Additional issues were more gender or culture specific and, to some extent, represented the differences that signal a social development that is in a transitional stage. The findings revealed that institutional factors, poor pre-college preparation, environmental factors (work-education conflict), early marriage responsibilities, well-paid job opportunities and financial concerns were most influential.

Research limitations/implications – Despite the limitations of relying on a small sample to generalize findings, the rich detail of this inductive study has added to the understanding of the dropout phenomenon in a new context.

Practical implications – The paper recommends both remedial and early intervention strategies to be undertaken by the Ministry of Education and universities. Remedial strategies include re-examining the desired standard of English as a condition for admission and adjusting the grading system. Early intervention measures that accommodate the needs of at-risk students are also proposed. At local, regional and international levels, higher education should be freed from commodification and inflated fees.

Originality/value – The paper presents a significant departure from the largely North American and European literature on the university dropout, by offering a broader knowledge of this phenomenon in another regional and national context.

Keywords Higher education, Retention, United Arab Emirates, Undergraduate students, Attrition, Dropout

Paper type Research paper

1. Introduction

Dropout rates are a major concern for many higher education institutions, and the phenomenon affects not only the dropouts themselves but also the entire society (Bernardo *et al.*, 2016). The term “university dropout” usually refers to a student who leaves the university course they are enrolled on before attaining their degree qualification. The term describes a student who may have departed, withdrawn or failed, or who will no longer complete the course. Heublein (2014, p. 503) defined non-completion as being the result of “prolonged decision making and [a] consideration process in which the different influencing factors accumulate in a constellation of problems that makes leaving the higher education institution seem inevitable.”

Dropping out of university could be either voluntary or involuntary. Voluntary reasons include the wish to pursue a different subject and/or to attend a different university, which is better described as a student transfer within higher education. Conversely, students may



drop out of their studies because they fail to achieve the required academic standards. In such cases, the dropout is involuntary. The distinction between different dropout behaviors is considered to be difficult, since they are frequently the result of various processes operating both externally to the university and within it.

The non-completion of higher education is commonly viewed as a waste of resources for both the individual and the institution (Yorke, 2004). For the institution, non-completion is indicative of the inefficient use of public finances: investing in teaching capacity and educational programs that are not beneficial to society when the students do not graduate. Attrition also translates into the students' loss of the tuition fees paid for the courses without obtaining a degree. Thus, it is necessary to address the dropout issues to avoid the inefficient use of personal, institutional and public resources.

There are few studies on the dropout phenomenon in the Middle East in general and in the Arabian Gulf States in particular (Kuwait, Saudi Arabia, Bahrain, Qatar, Oman and the United Arab Emirates (UAE), and these studies mainly address the issue in primary and secondary education. Despite the reported data on the Gulf States is few, it reveals alarming trends in non-completion of both secondary and tertiary education. Also, in the Gulf States, the dropout percentages are mostly far higher for boys. In a patriarchal society such as in the Gulf, boys typically prefer to seek employment so they can care financially for their families. A recent study of academic engagement at a private university in Oman, conducted by Sinha *et al.* (2018), found that employment and family proximity are pull factors, while dissatisfaction with teaching and learning culture are the main factors contributing to attrition. The study also found that attrition rates are higher in English-taught academic programs than in programs delivered in Arabic.

In the UAE, while university leaders treat student retention as a priority, there is no research available that sheds light on this phenomenon in tertiary education. Consequently, most attempts to enhance student retention have not achieved the desired impact. Despite the volume of research conducted internationally into the non-completion of higher education, little is known about the processes which occur before students enter and after they leave the higher education system itself. Research has focused mainly on the conditions that are thought to hinder or promote retention instead of the actual experiences of the students. In this exploratory study, in-depth interviews were conducted with students from different universities in the UAE who had discontinued their studies. The purpose of the interviews was to gain an understanding of the lived experiences that contributed to the students dropping out.

The UAE is a small country in the Arabian Peninsula. After the discovery of oil in the 1960s, rapid social changes have taken place in terms of urbanization and the education of women and their entrance into the labor market in greater numbers. There has also been an increase in mass luxury consumerism. All of these changes are signs of social development that is in a transitional phase. While the UAE exhibits a modern lifestyle, Emiratis are also deeply respectful of their own culture and traditions (Ashour and Fatima, 2016). Social developments involving education have also been significant. The UAE University was the first higher education institution founded in the UAE, in 1976. Since 1990, when there were only five universities, the number of institutions has grown rapidly to more than 100 today. Only three of these are public; the rest (76 accredited institutions) are either branches of renowned international or privately owned institutions (Ashour and Fatima, 2016).

The UAE has also relied heavily on bringing expats in to participate in the labor market, meaning that Emirati nationals constitute only 15 percent of the total population; however, they comprise almost 50 percent of the student population in private universities and the majority in public universities. Rapid social development has caused an increase in the number of non-traditional university students aged 24 and above in the UAE, many of whom were employed or married directly after finishing high school, and returned to

college after an educational gap of many years. Non-traditional students outnumber traditional students, who enroll immediately after high school, are usually aged 18–22 and do not have work or family responsibilities. Therefore, the students entering the higher education system in the UAE are not homogeneous in terms of their national background, employment status, age and gender. It is very common to see a mix of all types of student in the same classroom.

The UAE University, for example, has reported on its website that the attrition rates of expat students are significantly lower than those of Emiratis. Another feature of the UAE's education system is the gender gap, which favors female students. Females not only outnumber males in terms of enrollment, but they also outperform them in terms of academic achievement (Ridge, 2014). UAE University also pointed out that enrolling students directly to colleges, without their first passing an academic bridging program to solve any deficiencies in Arabic, English and mathematics, remains a major obstacle to progression in their studies. UAE University has concluded that attracting and retaining Emirati male students is therefore one of the main challenges for universities that deserves attention (UAE University, 2015).

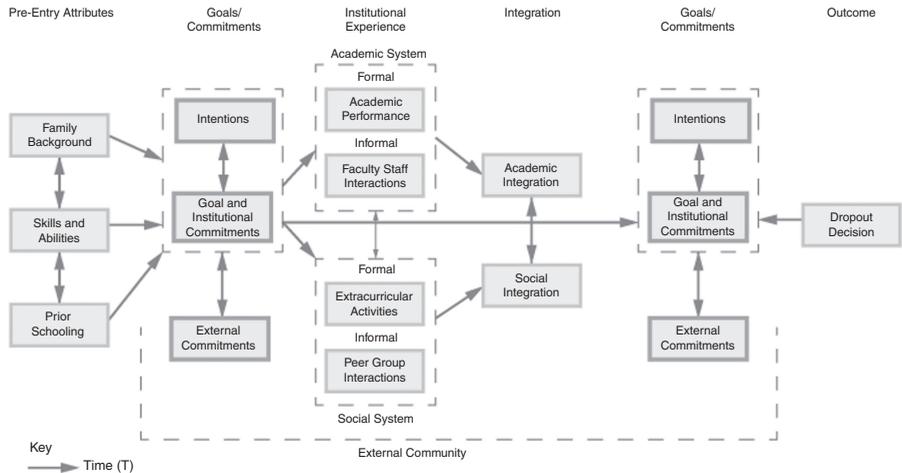
UAE's higher education standards have risen to meet the demands of a rapidly growing economy and to meet the requirements of the job market with its new challenges. In the past, UAE citizens could gain employment with a high school degree; however, in today's job market, competition is fierce, and there is growing demand for the additional competencies and skills associated with a higher education degree. Consequently, individuals need to possess a higher degree and to increase their educational standards if they wish to gain employment and to increase their income. Thus, students failing or dropping out of university could pose challenges to the UAE's economy and also to the job market. This research will shed light on university attrition in the UAE by attempting to understand the phenomenon through the lens of students who have dropped out. Although they share some common characteristics, the dropout processes vary between countries. The study will therefore compare its findings with international attrition research and will draw some practical implications for both institutions and policy-makers.

2. Theoretical models explaining dropout

Research into undergraduate retention began in the USA in the 1930s. With the increasing number of university students in the 1960s, empirical research began to grow tremendously (Seidman, 2012). Scholars interpreted this phenomenon using either one or a combination of economic, social and psychological perspectives. These are evident in the various models that can be used to explain the dropout phenomenon. Scholars such as Spady (1970), Tinto (1975, 2012), Bean and Metzner (1985), Cabrera, Nora, and Castaneda (1993), Cech *et al.* (2011), Heublein (2014) and many others were concerned with the variables related to student persistence in college.

2.1 Tinto's student integration model

The first dropout model was created by the interaction theorist, Spady (1970), and this followed sociologically grounded theory and included both academic and social aspects as the independent variables. Building on Spady's (1970) contributions, Tinto (1975) and Bean (1980) attempted to describe the process by explaining the students' decision to drop out on the basis of the interaction between their personal characteristics and the campus environment. Tinto's Student Integration Model, developed in 1975 and further enhanced in 1982 and 1993, is derived from Durkheim's theory of suicide and describes the dropout process (see Figure 1). Tinto's model posits that both academic and social integration are vital for college students' persistence in higher education.



Source: Othman (2016, p. 6)

Figure 1. Tinto's model explaining the process of university dropout

Tinto describes the dropout process as follows: upon entering the university, each student has attributes such as their family background, personal characteristics and prior schooling. These shape the student's initial intentions, educational goals and institutional commitments upon enrolling at the university. The initial educational goals and institutional commitments are formed by the experiences of the student within the university, which are divided into two distinct and interconnected systems – an academic system and a social system. The process of academic integration translates into individual academic performance and the individual's identification with the subject, in addition to the norms and values of the academic system. Social integration is determined by students' interactions with their peers and the faculty via social communication, friendship, faculty support and extracurricular activities. Student experiences within the institution are meant to lead the student to develop and uphold a particular level of academic and social integration at the university.

The level of academic and social integration is perceived as leading the student either to engage further with university studies and therefore strengthen educational goals and institutional commitments, or alternatively to be less engaged in university studies and therefore weaken educational goals and institutional commitments. It is thought that these educational goals and institutional commitments lead the student to decide either to leave or remain at the university. Tinto (1975, 1987) stated that the more that students are socially and academically integrated into the institutional culture, the greater their commitment to completing their degree. Tinto (1975) claims that past empirical research has mostly failed to recognize the distinction between different behaviors when analyzing university dropouts. Subsequently, Tinto distinguished between two dropout behavior types: voluntary withdrawal and involuntary dropout (i.e. dropping out because of academic failure). He also distinguished between permanent/formal dropout from higher education and student transfer to another subject of study or institution. Tinto considered that these different types of dropout behavior could be the result of different interactive processes in the university. For instance, involuntary dropout is thought to result from a lack of academic integration, whereas voluntary withdrawal occurs due to a lack of social integration.

The model has, however, been criticized by Bean (1985) and Cabrera *et al.* (1993) for emphasizing the on-campus stage as the decisive period in explaining dropping out.

They commented that the student's personal characteristics, as well as environmental factors including finances and the support of family and/or friends, in addition to the academic and social-psychological factors included in Tinto's (1975, 1993) model, directly affect the student's decision of whether or not to leave higher education. Tinto remarked that factors that are external to the university may also lead to dropping out, but concluded that their effects are indirect and may be noticed through changes in the educational goals and commitments of the student. Tinto's (1975) model focuses heavily on the social integration of students, particularly in the first year, but this point may not apply to non-traditional students. Bean and Metzner (1985) said that when non-traditional students attend the institution, they leave with a lower degree of social interaction; thus, a different model focusing on the student's external life instead of the institutional culture has been developed by Bean and Metzner (1985) to describe the attrition process of non-traditional students.

2.2 *Bean and Metzner's model for non-traditional students*

Further expanding on Tinto's contributions, Bean and Metzner (1985) proposed the Student Attrition Model (SAM) to explain attrition of non-traditional students, distinguishing between the attrition process of traditional and non-traditional students. SAM emphasizes the external factors which were not seen as significant in Tinto's work. The model has its foundations in behavioral theories and SAMs, such as those of Tinto (1975), Bean (1980), and Pascarella and Terenzini (1980). The model's structure (Figure 2) shows that the decision to depart or stay is directly influenced by four sets of variables: background and defining characteristics (age, gender, race/ethnicity, high school performance, educational goals and hours enrolled), academic performance (college grades), the intention to leave influenced by academic and psychological factors, and the environmental variables (finances, hours of employment, family encouragement, etc.). Bean and Metzner (1985) claimed that environmental variables, or pull

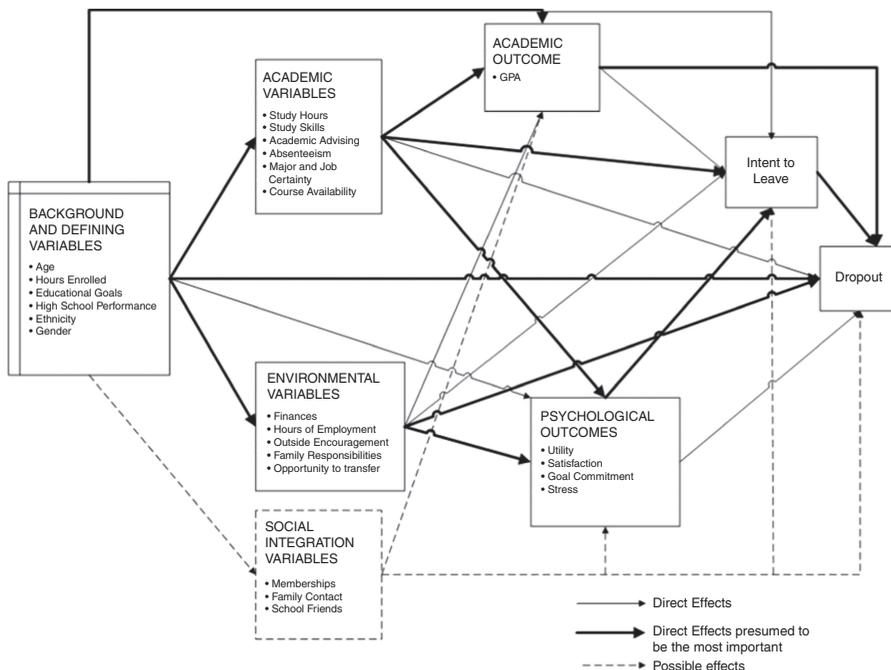


Figure 2. Bean and Metzner's (1985) non-traditional student attrition model

factors, can either support or hinder the retention of non-traditional students. The positive impact of environmental support may offset the negative impact of the academic variables. For instance, students who receive strong environmental support, e.g. parental encouragement or convenient commuting and working schedules, will stay at university in spite of poor academic support. However, good academic support may not compensate for weaker environmental support since non-traditional student attrition is expected to be most influenced by external factors. These assertions were empirically proven by Bergman *et al.* (2014).

Bean and Metzner's (1985) model describes a second compensatory effect between academic outcome (GPA) and the psychological outcomes of college attendance. A positive outcome in both respects is needed to encourage students to continue with their enrollment. Positive psychological outcomes may compensate for low GPA effects. However, high levels of stress may have a negative impact on retention despite high GPAs. For non-traditional students, academic integration is more influential on the student's decision to stay or leave compared to social integration (Bean and Metzner, 1985). The research findings for non-traditional students show there to be strong empirical support for the existence of links between academic integration and college grades (Metzner and Bean, 1987), in addition to links between grades and student retention (Nora and Cabrera, 1996).

More attrition models have come on to the scene of higher education. However, they are mostly adapted from the above models or adapted to a specific context such as Heublein's (2014) model contextualized for Germany. Burrus *et al.* (2013) created a new model, based on Tinto's and Bean's models, that was intended to be applicable to all types of institution and students (traditional and non-traditional). Burrus' model also explains retention beyond the second year of study and includes the three categories of factors that impact retention: factors that put the students on the track toward retention (e.g. preparation, motivation, study skills); pulling factors (e.g. family and health issues); and factors that ensure the students are kept on track (e.g. self-management, social support).

It is not the aim of this study to test these models; however, they certainly offer a useful theoretical construct for addressing the research questions. They serve as diagnostic tools to guide the research while exploring the interrelationship between the various factors discussed in these models and the attrition process in the UAE context in order to compare the findings of this research with international attrition research.

3. Research aim and questions

A considerable volume of empirical research on attrition has been conducted using quantitative methods and longitudinal samples, which cannot address the complexity of the intermingled factors contributing to dropping out. Therefore, exploring the perspectives and experiences of students who actually dropped out using a qualitative approach could provide a new dimension for understanding the phenomenon. The purpose of this study is to gain a detailed and systematic description of the experience of non-completion of undergraduate studies by undertaking a phenomenological analysis of 41 dropouts, addressing the main question: "What were the contexts or experiences that have typically influenced students' decisions that led them to drop out?"

4. Method

A qualitative research approach has been adopted for this study, as it allows the researcher to explore the "how" and "why" of human behaviors and what controls these behaviors (Edmonds and Kennedy, 2016, p. 112). The goal of most qualitative studies is not to generalize, but rather to provide a deep and contextualized understanding of certain facets of the human experience (Polit and Beck, 2010). Drawing data from the interviews could easily reveal information and non-verbal cues that may not be detected through a questionnaire.

Phenomenological analysis is a qualitative approach that helps researchers understand and unearth the human story behind a particular phenomenon through in-depth analysis of particular cases. It focuses on the commonalities of a lived experience within a particular group, aiming to describe the essence of a particular phenomenon (Creswell, 2013).

Through the phenomenological lens, this study set out to explore perceptions and perspectives to understand the situations that led students to drop out of university and how they experienced this event in their lives. This was done through the use of in-depth interviews. Tinto's and Bean's contributions provided a framework which helped when formulating the questions in the semi-structured interviews and in validating the findings.

4.1 *Sample and data collection*

In the phenomenological approach, interviews are conducted with individuals who have first-hand experience of a situation. While an appropriate sample number suggested by Morse (1994) for qualitative research is 30–50 participants and by Creswell (1998) is 5–25 for phenomenological studies, the required number of participants should instead depend on reaching saturation. Qualitative sample sizes should be large enough to obtain data that sufficiently describes the studied phenomenon; however, there should be a certain limit to permit analysis against the research questions and theoretical framework (Saunders *et al.*, 2018).

The researcher started by selecting a sample of 20 male and female former university students who had discontinued their studies no later than August 2017, using purposive, non-probability sampling. The researcher asked the students in a class on research methodology to identify potential interviewees from among their friends and relatives whose characteristics met study criteria. The collected data were not enough to conduct an analysis; therefore, we asked the interviewees to identify other students who had also dropped out of university (a snowball sample), thereby expanding this study to 41 participants from various universities in the UAE. The diversity of the sample, male/female, traditional/non-traditional and national/expat, required a higher sample number to enable the researcher to interpret the data collected.

The researcher carried out the first 20 interviews and trained her class in how to conduct a phenomenological interview. Four students were selected to conduct interviews with the remaining 21 cases of the study sample. To protect the rights and confidentiality of the participants, they were read a statement outlining the purpose and benefits of the study, before each interview. It was also made clear that participation was voluntary and that participants could withdraw from the interview at any time or choose not to respond to a particular question. Their confidentiality would be strictly maintained throughout.

A set of closed and open-ended questions were used to guide the interviews. More questions were added during the interviews, as needed, to obtain more detail. Questions about demographics or academic and social integration and individual factors were asked, such as “Why, when and how did you drop out?”, “What were your experiences when joining and withdrawing from university?” and “What should have happened to avoid dropping out?” The interviews lasted for one hour or more and were audio recorded where the participant consented. If audio recording was rejected, then extensive notes were taken during the interview. The researcher set up an online form to enable the research assistants to fill in the data from the interview in order to facilitate the analysis.

4.2 *Data analysis*

Thematic analysis was carried out on the interview responses to provide an understanding of the students' perspectives and experiences and to allow for common themes to emerge that could then be interpreted (Braun and Clarke, 2013). A process of coding and data reduction was used. From these codes, categories were established, and major themes were

identified and interpreted to render the results and conclusions. Validity was addressed by checking the themes with the research assistants and participants. Finally, the evidence was weighed in the context of international literature to validate the findings.

5. Results and discussion

All of the respondents shared their unique stories and experiences during the interviews. Most of their perceived causal factors for dropping out were consistent with international studies. In most cases, dropping out appeared to be a common phenomenon but, in some cases, the reasons were more nuanced and nation- or gender-specific. These differences and themes specific to the UAE's context have been highlighted in the findings.

5.1 *Demographics, family background, social status and prior schooling*

Students come to higher education with various demographic characteristics in terms of their parents' income and level of education, in addition to their gender and ethnicity. These are all factors that interrelate with the attrition rate. A little more than half of the study participants (23) were female, and the rest (18) were male. Among the female participants, 20 were Emiratis (nationals) and only 4 were expats; 2 came from Oman, 1 from Syria and 1 from Palestine. Among the males, 15 were Emiratis and 3 were expats; 1 was Palestinian and 2 were Sudanese. A total of 19 of the study participants were aged between 24 and 30 years, of whom 12 were male and 7 were female. In total, 15 study participants were younger, between 18 and 23 years old, of whom 10 were female and 5 male. Almost half of the respondents (20) were single; 12 were female and 8 male. In addition, 12 were married without children and 9 had between 1 and 6 children. Nearly half the respondents (18) were unemployed, 17 were employed in the public sector, and only 6 were working in the private sector (mainly expats) (Table I).

Parental income often influences student income and dropout rate (Chen, 2012). The majority of the respondents came from above-average income and affluent families. The financial status of their families was only an issue for the expat students whose parents were less affluent. The parents of the study participants were mostly the holders of a high school or bachelor's degree. The grades of the respondents in high school ranged between 65 and 90 percent.

5.2 *Culture and (nation)-specific themes (unique to Emirati students)*

In the UAE, the family, not the individual, is the founding unit of a collective society. In other words, communal interests normally supersede individual ones. Males are perceived as being the breadwinners in society, and they are therefore expected to support not only their own families but also their unmarried, widowed, or divorced sisters and mothers. This could happen if the father retires, has died, has become medically unfit to perform any job, or has re-married, meaning that his responsibilities have been expanded to such an extent that he cannot provide for all of the family members. These responsibilities may lead the younger males facing pressure to skip or drop out of college to cover the financial needs of the family. Some might opt instead to join the public sector, which offers well-paid job opportunities for Emiratis, because they want to establish their own families. In general, Emirati families prefer early marriage for both males and females. A total of 12 male respondents dropped out because they found a well-paid job and wanted to establish their own families.

The views of males regarding their potential return to education are shaped by the possibility of obtaining a job without needing further education. The relative ease with which most male respondents found work underlines the reasons for the lower appreciation of the economic return of education. The salaries offered for Emiratis in the public sector are attractive enough to make a student drop their study in order to get a job. After high school, males can join the police or

Demographic characteristic	Number (<i>n</i>)	Frequency (%)
<i>Gender</i>		
Female	23	55.6
Male	18	44.4
<i>Nationality</i>		
National	34 Emiratis	82.9
Resident	7 Expats	17.1
<i>Age</i>		
18–23	15	38.1
24–30	19	47.6
31–36	7	14.3
<i>Marital status</i>		
Single	20	49.2
Married	12	30.2
Married with children	9	19
Divorcee	0	0
<i>Employment status</i>		
Unemployed	18	46.8
Employed in public sector	17	45.2
Employed in private sector	6	6.5
Own business	0	0
<i>Year left university</i>		
1st year	18	43
2nd year	23	57
3rd year	0	0

Table I.
Demographic
characteristics of the
study participants

military, thus receiving a high salary. They also establish their own families and carry a financial burden, reducing the number of men who go to college compared to women. Some respondents worked and enrolled simultaneously in college and then encountered attendance and work/college time clash issues and ended up dropping out of college. These resonate with Belloc *et al.*'s (2011) assertion that male students have a higher probability of dropping out.

Nevertheless, this situation is changing due to socio-economic development and government efforts to encourage Emiratis to obtain higher degrees by offering job promotions based on higher qualifications. Therefore, many males and females decided to join university after a gap of many years, as non-traditional students. Many (29 out of 41) respondents also reported that they wish or are intending to return to education. However, some are uncertain because this gap might have affected their ability to study. These statements confirm Noel-Levitz's (2011) assertions that adult students who stop their undergraduate studies for a period of time are less likely to graduate than students who enroll immediately after high school.

5.3 Gender-specific themes (unique to men or women)

One of the major themes that emerged from the interviews with the female respondents was where marriage and child-related responsibilities were the driving factors for their departure from university. These respondents said that they dropped out because they got married and had children, and they intended to return to university once their children went to school. One female respondent said:

My dream was to be a doctor. I got 97.3% at high school and I joined the medical school for one year and then got married. After a while, I became pregnant. It was difficult for me to go to university while having small kids. Once my children go to school, I will re-join the university.

Another female respondent with children described the stress that she had encountered. She stated that she ended up departing from college to take care of her children despite her high grades in school and her willingness to complete her studies. She said, "I advise any female to complete her college degree before getting married." One female respondent said that establishing a kindergarten in the university would support female students with children and enable these women to attend college. These findings resonate with Stratton *et al.*'s (2008) assertion that married women are more likely to stop for a short period than to drop out entirely.

One female expat said that she was forced by her family to marry despite wanting to complete her studies. Her husband would not allow her to continue to study. She said, referring to some of her friends, that [the] "ambition and determination of women associated with their husband's support helps [a] woman to persist even if she has children."

For the male respondents who were married, their family or their children played an indirect role in their decision to drop out. The males were more concerned with having a job to care for their families and thus their employment played a greater role in their early departure decision. Stratton *et al.*'s (2008) claim that men with young children have a lower probability of dropping out and that married men are more likely to drop out from their studies for a short period than men who are not married.

The literature exhibits varying results about the effects of gender on persistence. Reason's (2003) study revealed that gender had little or no influence on persistence. On the other hand, Corbett *et al.* (2008) discovered that women attend and graduate from college at higher rates than their male peers. My findings also confirm there to be gender differences in terms of dropout behaviors and the reasons behind them. Women in the UAE enroll, persist and graduate more than their peer males (Ridge *et al.*, 2017). Explanations given by the author for this difference are poor academic preparation in schools, easy access for Emirati young men without college degree to well-paid jobs and early family responsibilities.

5.4 Academic aptitudes (pre-college schooling)

Although it is highly unlikely that students would admit to dropping out because of poor academic attainment, 7 out of 41 respondents reported that they could not manage their studies and were dismissed from university due to their low GPA. One student said, "I had ambition to obtain a BA certificate, but my performance was poor. My GPA was falling, and I got frustrated and decided to withdraw from college rather than wasting my money and time." Research has shown that students with a lower GPA have a higher probability of dropping out from university (Belloc *et al.*, 2011; Chen, 2012; Stratton *et al.*, 2008), concluding that college GPA is the biggest dropout predictor.

Inadequate preparation of high school students has unquestionably contributed to university dropout rates. Research indicates that one of the most important factors affecting students' dropout rate is their grades in secondary school (Paura and Arhipova, 2014). The characteristics that have been acquired before entering higher education are presumed to impact directly the decision to leave or remain. Some of the students enrolling in colleges do not have the reading or writing skills needed to pass college and they are, therefore, required to join academic bridging programs (Swail, 2004). In the UAE, all universities require students to have an adequate command of the English language, and this is another challenge facing many students who acquired their secondary education in the Arabic language. Some universities have recently started to offer new programs in the Arabic language that do not require English proficiency as an admission requirement. However, many students are still not aware of these new programs, and they drop out of their studies instead of transferring to a new subject taught in the Arabic language.

While grades in high school are a significant predictor for student retention at university (Belloc *et al.*, 2011), this is not the case in the UAE due to the inflation of marks in both

schools and universities. Families are desperate for their offspring to get high marks, leading to many cases where the marks obtained are not deserved by the students. The pass grade in the UAE's educational system is 60 out of 100, and students must obtain at least 2 out of 4 average grade points (equivalent to 70 out of 100) to be able to graduate. These conditions make students plead for high marks, putting pressure on teachers, schools and universities. Amending the grading system by reducing the pass grades to 50 out of 100 would ensure that the marking system is fair. In addition, diversifying teaching methods and attracting high-quality school teachers are necessary for preparing students to succeed in their undergraduate studies.

Another important common issue raised by the interviewees is the heavy reliance of most families on housemaids, mostly from Asia, in the upbringing of their children. This leads to three major consequences: the children have inadequate Arabic and English language skills; the children develop an irresponsible attitude; and the children suffer from inadequate socialization and exhibit poor behavior. Children who come to universities with these characteristics and attitudes have a lower GPA, a low motivation to study and they get disappointed quickly and depart after only a few attempts. Higher motivation results in higher academic achievement, and this can lower the dropout rate (Gottfried, 2009). There were a few cases where the study participants were financially well-established, exhibited an irresponsible attitude, and saw no value in education. They ended up dropping out of college. This finding supports Belloc *et al.*'s (2011) assertion that students with a very high income may be less motivated to finish their studies.

Research on the dropout rate has shown that the attrition is much lower in countries with more selective higher education admissions systems than in countries with more open systems (Chen, 2012). This might pose a challenge in the UAE, where many students might not have the opportunity to get into tertiary education even though the government is encouraging them to do so. Students often leave universities which have strict rules in order to enroll in universities that are more flexible in terms of their attendance rules and grading systems. Some of these students also fail, making the attrition rate in some private universities 30–40 percent.

However, this situation is changing, with more Emirati families appreciating education and enrolling their children into quality schools. Current university students are the parents of future children, and they are therefore more conscious than the older generations of the significance of education. Furthermore, the UAE Government is also providing generous incentives in various forms for Emiratis who further their education.

5.5 Academic and Social Engagement

Failing to make satisfactory academic progress is one of the predictors of the suspension of education. Low grades lead to academic probation and warnings and to the re-taking of courses to fulfill degree requirements; these were the reasons mentioned by some of the study participants for their academic disengagement. The participants of the study joined their colleges between 2010 and 2017; 23 of them left in their second year and 18 in their first year. While research indicates that dropouts mostly occur in the first year (Chen, 2012), in this study, students tended to drop out later. This pattern could indicate that students benefited from positive experiences when they joined their colleges, as revealed in the interviews, and that students were more influenced by environmental pull factors. Social engagement had no effect. According to Duque (2014), the more satisfied students are, the less likely they are to drop out; however, this can only be true if we assume that environmental factors are stable.

The results confirm Bean and Metzner's (1985) assertion that social integration was not an issue and that other environmental and academic factors played a role in their premature departure decision. When the participants were asked about their experiences when they

joined the college, the majority said that it was a wonderful experience. One added, "I was excited to experience university life where I felt free to decide for my future and study the subject I had dreamed of." Another said, "I was able to make friendships with people of different cultural backgrounds. I learned to take responsibility and to feel the urgency of time in completing projects. I have acquired many skills such as English, presentation and teamwork skills." The research emphasizes the importance of social integration for student success, such as establishing friendships with their peers, promoting interactions with faculty members, encouraging membership of student clubs, and engaging in school activities. This is, overall, a part of connecting to the campus culture (Duque, 2014). However, when external factors play a greater role, social integration will no longer be a factor when it comes to retaining the students. Non-traditional students hardly engage in uncredited social activities. For non-traditional students, other variables play a role in the students' persistence, according to Bean and Metzner's (1985) model, such as the timing of classes, course availability, study skills or GPA. For the author, part-time students were found to be less likely than full-time students to complete their undergraduate degrees.

Another interesting finding emerged when the students were asked about their peers and the role the peers played in the students' decision to leave. They reported that peer quality improves the student experience and therefore their performance, particularly in the first year. When the students first join college, they feel lost. However, by having senior peers who can advise them, their engagement experience and performance improve. This finding resonates with earlier studies on peer effects; for example, Berthelon *et al.* (2019) found that peer effects are an important contributing factor in the learning process. This means that forming study groups in classes can support the students' success and persistence.

These results contradict Chen's (2012) assertion that students with a higher level of academic or social integration have a lower risk of dropping out and Johnson *et al.*'s (2014) claim that the college environment could cause stress and therefore influence the dropping out. This might apply to traditional students but not to non-traditional ones. It is apparent from the analysis that both academic and environmental issues were the most influential factors in the students' departure decisions. The analysis also confirms that Tinto's model fails to explain involuntary departure and that it was necessary to use Bean's model.

5.6 *Environmental factors (unique to non-traditional students)*

The analysis revealed that the participants who felt excited and hopeful prior to enrollment quickly became overwhelmed and struggled with time, family and work responsibilities. If they had children or got a job, they gradually became unfocused, isolated, unmotivated and disappointed, leading to an ultimate disengagement from the university. One participant said:

It was a beautiful experience by all means since I enjoyed my study a lot and I identified myself with the subject I chose to study. I interacted with other students and doctors and adapted quickly to the atmosphere of college, but I suffered because I work in the morning until two PM and then go to college. My mind is not focused in classes because of fatigue. And another obstacle was the long distance to my college. I lost control of my time and could not complete the study.

Other distractions described by expat students included homesickness and the pressure of finding a job to be able to pay their university fees. For expats, only the private sector is able to offer them short-term jobs, but with very low salaries, making them feel under pressure while jumping from one job to another, with each new shift schedule affecting their attendance and overall performance at college.

Non-traditional students have a variety of work, life and academic responsibilities. In addition, their accumulated negative experiences from their time at school may have impacted their self-confidence. Being a non-traditional student is fraught, requiring time to pursue homework assignments and final projects, in addition to attending classes, drafting

essays, collaborating with study groups and engaging in other activities that are necessary for academic success. Some of the study participants felt that the time available to them was not enough to dedicate to their academic life. One said, “I was very excited to study and did not expect to leave the college so quickly. I could not balance my life and college obligations. After thinking seriously, I decided to leave college to avoid risking my job.”

Study participants said that, when they have other responsibilities, academic responsibilities move to the bottom of their priorities. Managing multiple roles leads to mental fatigue and stress. Then, they start feeling guilty, demoralized and frustrated, leading to their departure. The wide variety of life circumstances, and the competing demands of work, family and financial pressures (only for expat students) made it very challenging for students to create a balance that allows them to complete their degree. Emotional exhaustion, which is part of burnout syndrome, could influence dropout (Duke, 2014). As seen in Bean and Metzner’s (1985) model, environmental issues contribute to psychological outcomes; however, these factors were not revealed in the interviews with non-working or unmarried study participants. My findings agree with the literature, which viewed non-traditional students as being at high risk while completing their degrees (Kasworm, 2014). Knowing that the majority of university students are non-traditional, more flexible procedures need to be put in place by universities. Some students suggested offering bachelor’s courses over weekends and making mutual arrangements between universities and employers to facilitate their education. If the employer is encouraging the student to complete their degree, then this could have a positive impact on the student’s persistence (Taylor *et al.*, 2012).

5.7 Financial factors (*expat-specific theme*)

Working while attending college, to be able to self-finance their studies, is an issue faced only by non-Emirati interviewees, who said that being financially independent is important when related to the completion of their studies. The students had to work in parallel with studying and felt under financial pressure which negatively affected their experiences, resulting in them often feeling stressed and burnt out. Working while studying not only ate up their time, but it also made them feel under pressure when it came to meeting their deadlines or attending classes while feeling exhausted. These findings align with the literature, which says that working students tend to register for part-time studies and work excessively, leading to a situation that negatively influences their grades and retention (Tinto, 2004). In line with Belloc *et al.* (2011), the research found that students with a higher income were less likely to drop out because they were more able to pay their tuition fees and were better prepared in their high schools.

5.8 Institutional factors

The research identified the institutional features that could influence the dropout rate and found that the students who dropped out were more likely to have attended institutions with low admissions criteria (Chen, 2012). However, quite a number of the study participants (12) left university because they could not pass the EmSAT exam, which is a requirement for admission. Students are admitted to university and enroll in general courses while preparing for and taking the EmSAT exam, or ILTES, with a minimum score of 5 required. One respondent said she repeated the ILTES exam eight times, and another failed it five times and then gave up. The EmSAT is a standardized test, based on UAE national standards. The aim of the test is to ensure that students are equipped with the necessary skills to contribute to creating a knowledge-based society, which is a fundamental goal of the UAE. The EmSAT exams are mandatory for grade 12 students in both public and private schools, as a prerequisite for higher education. They consist of sets of questions on various subjects, including Arabic, English, chemistry, physics and mathematics.

The exams are one of the main reasons that many students give up their studies and others transfer to programs that they do not like, because passing the ILTES is not a condition for admission to these programs.

Study participants reported that support from institutions, including abandoning English tests, would have helped them to continue their studies. Bergman *et al.* (2014) examined the challenging relationship between non-traditional students and the university environment, pointing out a lack of policies, procedures and services that support the persistence of this type of student. Kasworm (2014) also found that institutional responsiveness and other factors, such as educational aspiration and familial encouragement, play significant and positive roles in helping non-traditional students to persist in their studies. Having a proper infrastructure, appropriate facilities and a suitable number of faculty members were among other reasons mentioned by respondents that also would have encouraged them to stay. These results are consistent with Chen's (2012) findings that the students who dropped out were more likely to have attended institutions with a lower full-time faculty: student ratio, and that the students in institutions with a higher level of expenditure on student services had a lower drop-out rate.

These findings highlight the limitations of both Bean's and Tinto's models, which neglected the institutional factors. This study finds that these institutional factors may also play a critical role in the students' premature departure decision.

6. Conclusion

This qualitative study explored the experiences of Emirati and non-Emirati, male and female, traditional and non-traditional, former undergraduate students who had dropped out of undergraduate studies. Several issues were identified as contributing factors for dropping out that are consistent with those found in the international literature. Additional issues were more gender or culture specific and, to some extent, represented the differences that signal a social development that is in a transitional stage. The findings revealed that institutional factors (admission English tests and grading system), pre-college academic unpreparedness, environmental factors (work-education conflict), early marriage responsibilities, well-paid job availability (for nationals) and financial concerns (for expats) were the most influential factors related to the students' disengagement decisions. Many of the problems encountered by the current generation in terms of language and academic inadequacies are expected to disappear in future generations. Early marriages, that were common in the past and led females and males to interrupt their studies, have begun to diminish gradually in the population, and families are increasingly appreciative of a return to education.

It is recommended that universities develop both remedial and early intervention strategies. Remedial strategies should be adapted for the current university generation, which is mostly non-traditional and has been cut off from education for some years and is, therefore, academically not well-equipped. It is also recommended that the Ministry of Education should consider abolishing the English test as a condition for university admission. Instead, students can achieve the desired standard of English on graduation rather than on admission. Revising the grading system will also ensure more fair marking in the universities and help solve the issue of mark inflation. University dropout is very much related to pre-college preparation; therefore, attracting high-quality school teachers by offering more competitive salaries will help prepare well-educated future generations. Universities should also put in place early intervention measures by providing support for at-risk students in the form of extra classes, tracking students' grades and attendance records, and mentoring students at a very early stage of poor performance. At local, regional and international levels, higher education should be freed from commodification and inflated fees which inhibit many talented students from completing their education due to financial concerns. Cost reduction measures by some universities come at the expense of the

quality of graduates. In view of the increasing numbers of non-traditional students, institutions must incorporate policies and procedures that help attract and retain them. New research is therefore needed on their needs and expectations. Additional research is also necessary to be conducted more specifically on the variation of dropout behavior between gender, class and social groups.

Despite the limitations of relying on a small sample to generalize findings, the rich detail of this inductive study has added to the understanding of the dropout phenomenon and presented a significant departure from the largely North American and European literature on the university dropout, by offering a broader knowledge of this phenomenon in another regional and national context. In addition to its practical implications, this study has made a theoretical contribution in highlighting the limitations of Tinto's model (neglecting environmental and institutional factors and involuntary dropout) and Bean's model (neglecting institutional factors in terms of the policies and procedures that support non-traditional students). These factors have been found to be among the most significant in determining whether non-traditional students drop out of university.

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