

# Age, burnout, work engagement and sense of coherence in female academics at two South African universities

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## Abstract

*The influence of the age of female academics on their work experience in South African universities has not been researched to date. Yet, much publicity has been given to the “leaking pipeline” syndrome, referring term which refers to the loss of female academics before they attain one of the higher positions, such as senior lecturer, associate professor or professor. This trend is alarming as universities strive to achieve employment equity on all hierarchical levels. As the link between being an older academic and being higher up in the academic ranks cannot be denied, it is becoming important to find ways of retaining older female academics. The study reported here was conducted from a positive psychological paradigm. The aim of the study was to determine the influence of age on female academics’ experience of burnout, work engagement and sense of coherence. The results confirmed a positive relationship between age and work engagement, as well as sense of coherence. No relationship between age and burnout was found, implying that women are expected to experience higher levels of work engagement and sense of coherence. Recommendations are offered for management on how female academics could be retained and supported towards reaching the higher ranks of academia.*

**Key words:** female academics, age, age discrimination, work engagement, sense of coherence, burnout

## 1 Introduction

Age is a contentious issue, irrespective of whether the reference is to younger or older employees, especially in a society that equates youthful attractiveness with success. Employers committed to enhancing the work engagement of the multi-generational workforce of today are especially interested in determining how age affects employee engagement and how employee engagement can be maximised. Søndergaard (2005:193) established that gender manifests as a significant category of diversity within the academic world. This is of specific importance to more mature female academics, as research suggests that they are significantly affected by these stereotypes. It is argued that it is acceptable and even expected of male academics to be less attractive. This is in direct contrast to the female role expectation (Pitt-Catsouphes & Matz-Costa 2009). Granleese and Sayer (2006:502) report that female

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academics are exposed to a double jeopardy, in that they are discriminated against on the grounds of their age and gender in a way that men are not. Non-academics see academics as being career-driven as a result of their lack of attractiveness and poor appearance (Jensen 2008) and, in response, younger female academics tend to “dress down” as they perceive an attractive appearance to be a disadvantage to their career progression (Granleese & Sayer 2006:504). These authors describe this phenomenon as “gendered ageism” and “lookism” and argue that female academics are perceived as “older” at a much younger age than their male colleagues. Hence it can be argued that female academics in general are particularly vulnerable to “age discrimination”. Furthermore, Duncan and Loretto (2004) report that women of all ages experience negative attitudes toward their age more frequently than men.

Although studies have shown that women in higher education have made significant progress in breaking through the glass ceiling, there are still cultural, organisational, political and social obstacles that prevent many female academics from reaching their full potential (Okpara, Squillance & Erundu 2005). John Curtis, director of research of the Association of American Professors, indicated that female academics earned an average of 80% of the salary of male academics. It is estimated that in 2011, South African female lecturers earn on average R30 000–R50 000 per annum less than their male counterparts (Payscale 2011).

The problem that South African universities face is that scarce and highly skilled academics are aging at an alarming rate (Tetty 2009). Academics, both male and female, in middle and later career and life stages represent an underutilised talent pool in the South African workforce, neglected in research, theory and practice. Cervini (2002) notes that younger academics are not available to take the place of retiring academics, largely as a result of the funding problems experienced in higher education. The Council on Higher Education (2009) states that retention and appropriate rewarding of academic staff are essential for the success of academic institutions. The demographic profile of South African academics reveals a worrying trend. An employee survey conducted at a South African University of Technology in March and April 2011 revealed that 67% of staff are concerned about the imminent retirement of senior academics and feel that the university urgently needs to find ways to retain the institutional knowledge at risk (TUT e-tutor 2011). The national Hemis database (Letseka, Cosser, Breier & Visser 2010) recorded slightly over 15 000 academic staff members at South African public universities. Of these, 42% were women, mostly in the lower ranks, namely lecturers (51%) and junior lecturers (55%). An alarming downward trend emerged in the senior ranks, as only 41% of the senior lecturer positions are filled by women and only 31% of the associate professor positions. Only 19% of all full professors in South Africa are female. A very real concern is that universities only seem to be concerned with the “total number” of women in employment, while ignoring the fact that many talented academics are lost through the “leaking pipeline” before they ever reach the position of senior lecturer or professor.

Many female academics follow a somewhat slower career development path, as they are primarily responsible for child rearing. This makes them particularly vulnerable to age discrimination. In reality, it takes time to complete a doctoral degree and publish the number of accredited journal articles necessary to reach the professorial level. By the time these female academics comply with the publication requirements for professorial appointment, they are already the target of age discrimination and often also close to the mandatory retirement age of 60, as is currently the case at both universities that formed part of this study (one University of Technology and one Comprehensive University). Internationally, Ismail, Rasdi and Wahat (2005) identify

“high-flying” female academics as women who become professors by the age of 48. The general population of female academics will therefore only reach this level in their fifties, or even later, as South Africa is still a developing nation and many women follow a much slower path of academic development, through studying part time, while having a full-time job, rearing a family and fulfilling the traditional female role of being primarily responsible for the household.

The question therefore arises whether it is reasonable to expect academics to retire at the age of 60, when they are at the pinnacle of their academic careers. According to Ticktin (2011), at the age of mandatory retirement most academics are not far removed from their peak ability as researchers and teachers. He notes that this is a real loss to the institution as well as for the lecturers involved.

South African universities expect a staffing crisis in the near future (Tetty 2009) as experienced academics near the age of mandatory retirement. Sussman and Yssaad (2005) argue that retaining academics for longer might offer a solution to the problem. Adults in their middle to late career stages are generally healthy, live longer and are able to cope with less physically demanding jobs. For the individual, the benefits of prolonged employment are financial, emotional (a sense of purpose, recognition and identity), physical and social (research teams, collaborations and peer reviews).

Research in organisational psychology that has been conducted from a salutogenic paradigm is limited (Strümpfer 1990). Salutogenic functioning refers to those internal driving forces that enable an individual to stay well, succeed and thrive amid stressful circumstances in life (Rosenbaum 1990). Aspects like work engagement and psychological strengths have not yet received the attention they deserve in academic research (Rothmann 2002:12-14). Psychology, with its emphasis on human suffering, has been criticised for focusing too much on pathology rather than positive outcomes in the work environment (Diener, Suh, Lucas & Smith 1999). Both Diener et al (1999) and Schaufeli (2004) report a negative versus positive ratio of journal-published articles of 17:1. In their study, Seligman and Csikszentmihalyi (2000) advocate a movement towards a positive approach in psychology.

A similar trend is observed concerning research on the female gender. Various researchers identify the need for a more positive approach, focusing on the enhancement of health in studying gender differences (Nelson, Burke & Michie 2002; Simmons 2000; Taylor et al 2000).

No study could be found in South Africa that addressed the interaction of age, burnout, work engagement and sense of coherence specifically among female academics. As no information is available on these issues, research results can be of great value in learning to understand the career development of female academics and in designing organisational interventions to address problem areas.

The main purpose of the study on which this article is based was to determine how the age of female academics is related to the levels of burnout, work engagement and sense of coherence at two higher education institutions in South Africa.

More specifically, the objectives of the study were:

- to determine the levels of burnout, work engagement and sense of coherence in female academics; and
- to determine whether the age of the female academics correlates significantly with the levels of burnout, work engagement and sense of coherence in female academics.

The remainder of this article will include, firstly, a theoretical explanation of the research constructs and the existing research results. Secondly, the research procedures and empirical results will be offered. Thirdly, the findings of the study are presented. The article concludes with recommendations on how best to use the potential and talent of older academics in the contemporary university, and guidelines for future research will be offered.

## **2 Research constructs**

In this article, the correlation between the age of female academics and the levels of burnout, work engagement and sense of coherence will be elucidated. Each of these constructs is integral to the psychological work experience of female academics throughout the various progressive career stages, as will be briefly explained.

### **2.1 Age**

Although the general workforce in South Africa is fairly young, the opposite trend exists for academics. Barry and Sawyer (2008) report that 50% of academic staff in South Africa are over the age of 50. Similarly, Tetty (2009) found that the percentage of academics in South African universities who are over the age of 50 varies from 30% (for example at the University of KwaZulu-Natal) to more than 50% (for example at the University of Cape Town). Unisa (2011) reports that the staff component at Unisa is ageing, with evidence of an increase in the last four years in the group who are 55 years of age and over. A detailed analysis revealed that a large number of white and male academic staff members are approaching retirement age. The alarming reality that universities face is that the small core of valuable human capital, constituting the South African academic workforce, is ageing at a rapid rate. Universities are thus faced with a totally new "brain drain", as opposed to the emigration problem of highly skilled academics. This loss of talent has major implications for human resources planning and staffing in particular. As mentioned previously, Ismail et al (2005) rate successful female academics as those who become professors at the age of 48. The mean age of female professors is therefore expected to be in the fifties. Tetty (2009) concluded that it would be very difficult to meet the future demand only from the ranks of younger academics in South Africa. With rapidly increasing student numbers and the slow rate at which younger academics are qualifying, older female academics could offer an alternative source of human capital (Sussman & Yssaad 2005).

### **2.2 Burnout**

Maslach and Jackson (1986) originally defined burnout as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that occurs among individuals who work with people. Maslach and her colleagues expanded the burnout concept beyond human services (Maslach & Leiter 1997). Burnout was consequently redefined as a crisis in one's relationship with work, not necessarily as a crisis in one's relationship with people at work. Hence it became necessary to revise and rename the three dimensions to include all jobs. An adapted version of the Maslach Burnout Inventory (MBI) was developed to measure burnout in jobs that are not exclusively human services-related, namely the Maslach Burnout Inventory-General Survey (MBI-GS). The three dimensions measured by the MBI-GS are exhaustion, cynicism and reduced professional efficacy (Maslach, Jackson & Leiter 1996).

Schaufeli (2004) offers a comprehensive definition of burnout, stating that it is a persistent, negative, work-related state of mind in “normal” individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced competence, decreased motivation and the development of dysfunctional attitudes at work. Van Tonder and Williams (2009) report that age has been found to be related to burnout, although it should be noted that research findings to date have not been consistent. Based on this discussion, the first set of hypotheses of the study is offered:

Hypothesis 1a: Exhaustion will be significantly positively related to age.

Hypothesis 1b: Cynicism will be significantly positively related to age.

Hypothesis 1c: Reduced professional efficacy will be significantly positively related to age.

### **2.3 Work engagement**

Research on the work engagement concept has taken two separate, but related paths (Storm 2002). Maslach and Leiter (1997) describe work engagement as being characterised by energy, involvement and efficacy, which are considered the direct opposites of the three burnout dimensions, namely exhaustion, cynicism and reduced professional efficacy. Focusing on work engagement implies a focus on the energy, involvement and effectiveness that employees bring to the job. Schaufeli and Enzman (1998) partly agree with Maslach and Leiter's (1997) description, define and operationalise work engagement from a different perspective. Schaufeli (2004) considers burnout and work engagement to be opposite concepts that should be measured independently using different instruments.

Schaufeli (2004:4) consequently defines work engagement as a positive, fulfilling, work-related state of mind that is characterised by three subdimensions, namely vigour, dedication and absorption. Work engagement does not refer to a momentary and specific state, but rather to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour.

The findings of the Age and Generations Study conducted at Boston College provided a list of the overall drivers of employee engagement; that is, characteristics of employees associated with higher levels of engagement. The first and most important driver was identified as age (being older) and the second as gender (being female) (Pitt-Catsouphes & Matz-Costa 2009). This serves to confirm the idea that older female academics are expected to be more engaged with their academic jobs and should therefore be recognised as valuable human capital to be nurtured.

Based on this discussion, the second set of hypotheses is offered:

Hypothesis 2a: Vigour will be significantly positively related to age.

Hypothesis 2b: Dedication will be significantly positively related to age.

Hypothesis 2c: Absorption will be significantly positively related to age.

### **2.4 Sense of coherence**

The movement towards a positive psychological approach – away from the pathogenic paradigm – leads to the development of the construct “sense of coherence” (Antonovsky 1987; Redelinguys 2003; Redelinguys & Rothmann 2004). Antonovsky (1987) and Loye (2000) hold that humans are able to make sense of their reality despite the increased complexity they experience. Antonovsky (1987) postulates that it

is the particular way in which an individual appraises or understands his or her environment, referred to as sense of coherence, which allows the individual to make sense of complex environments. Sense of coherence is conceptualised as a psychological, global orientation that influences the way in which individuals understand their environments and can therefore give rise to individual differences in behaviour.

The sense of coherence construct consists of three underlying components, namely comprehensibility, manageability and meaningfulness (Antonovsky 1987). Sense of coherence is conceptualised as a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of coherence manifesting in three behavioural experiences (Barnard, Peters & Mueller 2010, Du Toit 2002; Strümpfer 1990; Strümpfer & De Bruin 2009, Van der Colff & Rothmann 2009):

- 1 The stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable. This is called comprehensibility, where the individual makes sense of the stimuli in the environment.
- 2 The belief that resources are available to meet the demands posed by these stimuli. This is called manageability, where the individual is able to cope with the demands of the environment.
- 3 The belief that these demands are challenges worthy of investment and work engagement, which is known as meaningfulness.

Based on this discussion, the third set of hypotheses is offered:

Hypothesis 3a: Comprehensibility will be significantly positively related to age.

Hypothesis 3b: Manageability will be significantly positively related to age.

Hypothesis 3c: Meaningfulness will be significantly positively related to age.

## **2.5 Integration of the constructs**

The three psychological conditions explored in this study, namely burnout, work engagement and sense of coherence, are postulated to be related to the age of female academics. Wissing and Van Eeden (2002) observed clear indications that older employees score relatively high on various indexes of psychological well-being. This is in accordance with the trends identified in the existing literature (Antonovsky & Sagy 1985; Schaufeli 2004; Wissing & Van Eeden 2002).

Schaufeli (2004) reports a weak positive relationship between work engagement and age. Schaufeli and Bakker (2003:18) calculated correlation coefficients between age and work engagement ( $r = 0,14$ ); age and vigour ( $r = 0,05$ ); age and dedication ( $r = 0,14$ ); and age and absorption ( $r = 0,17$ ). Furthermore, according to Schaufeli and Bakker (2001), two dimensions of work engagement are logically related to burnout, namely vigour to exhaustion and dedication to cynicism (Rothmann 2002). The question arises whether a strong sense of coherence can ward off a major threat such as burnout (Rothmann, Scholtz, Rothmann & Fourie 2002). A person with a strong sense of coherence is likely to see stressful situations as less threatening, which could contribute to low levels of burnout (Antonovsky & Sagy 1985). Feldt (1997) found that, as the level of sense of coherence strengthened, the scores for burnout (specifically emotional exhaustion) decreased. Gilbar (1998) reports that individuals with a strong sense of coherence experience less burnout than those with a weak sense of coherence. Levert, Lucas and Ortlepp (2000:38-39) found that people in the caring professions, with a strong sense of coherence and a manageable workload, will be far less likely to experience emotional exhaustion and depersonalisation. Levert et al

(2000:39) reported a significant negative correlation between two components of burnout (emotional exhaustion and depersonalisation) and sense of coherence.

Based on the above discussion, the fourth major set of hypotheses are offered:

Hypothesis 4a: Burnout will be significantly positively related to age.

Hypothesis 4b: Work engagement will be significantly positively related to age.

Hypothesis 4c: Sense of coherence will be significantly positively related to age.

### **3 Research design**

The research design for this article included the following:

#### **3.1 Research methodology**

For the study on which this article is based, a quantitative cross-sectional survey design was used, measuring the variables and reporting on the statistical correlation between them (Maree 2007; Mouton 2006).

The research method followed included the following:

#### **3.2 Research participants**

The population consisted of the female academics in permanent employment at the various campuses of one Comprehensive University and one University of Technology, representing three different provinces. There were 652 female academics in permanent employment at the Comprehensive University and 338 at the University of Technology during this period. The total population of 990 female academics was invited to participate. Of the 990 in the population, 190 responded to the request to participate and filled in questionnaires. Of these, 187 questionnaires were usable. The total population that responded was therefore 18,9%. Pallant (2001) argues that, for this type of research, the minimum number of respondents needed would be 150 (15%). The total of 187 respondents was therefore considered to be an acceptable response rate.

#### **3.3 Measuring instruments**

The measuring battery was compiled from a biographical questionnaire, the Maslach Burnout Inventory-General Survey (to measure the levels of burnout), the Utrecht Work Engagement Scale (to measure the levels of work engagement), and the Sense of Coherence questionnaire (to measure the strength of the sense of coherence of the participants). The Maslach Burnout Inventory-General Survey consists of sixteen items that constitute the three subdimensions, namely exhaustion, cynicism and a reduced sense of professional efficacy, which are reverse-scored to calculate a total burnout score. All items are scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (always) (Maslach & Jackson 1981; Maslach & Jackson 1986; Maslach & Leiter 1997). These subdimensions are regarded as interrelated, but conceptually distinct. A total burnout score is calculated by adding the three scores. The Utrecht Work Engagement Scale consists of seventeen items and is scored on a 7-point frequency rating scale, ranging from 0 (never) to 6 (always) (Schaufeli & Bakker 2003; Schaufeli & Enzman 1998). Three dimensions of the work engagement construct, namely vigour, dedication and absorption, are measured.

A total score is calculated by adding the three subscores. The Sense of Coherence questionnaire consists of 29 Likert-type self-rating items (Antonovsky 1987; Dhaniram

& Cilliers 2003). The three subdimensions of the questionnaire are measured independently, namely comprehensibility (11 items), manageability (10 items) and meaningfulness (8 items) (Antonovsky 1987). The subdimension scores are added to compute a total, overall score for the construct sense of coherence. These scales have been used extensively in South Africa, for example in terms of financial health (Barnard et al 2010), job satisfaction (Strümpfer & De Bruin 2009) and with registered nurses (Van der Colff & Rothmann 2009).

### **3.4 Research procedure**

After ethical approval had been obtained from the respective institutions, the instrument was sent electronically to all the participants, via the internal electronic communication networks of the Comprehensive University and the University of Technology. The participants completed the instrument and returned it electronically to the researcher. The SPSS statistical package was used to calculate the descriptive statistics in order to determine the Cronbach's alpha scores and explore the relationship (correlation) between the research constructs.

### **3.5 Characteristics of the population**

Two institutions were used in this research, one Comprehensive University and one University of Technology. Although the main campuses of both institutions are situated in the greater Tshwane area, their satellite campuses are dispersed over a wide geographical area, from Gauteng (Florida, Sunnyside, Pretoria West, Brooklyn, Arcadia, Soshanguwe and Garankuwa Campuses) to Mpumalanga (éMalahleni/Witbank and Mbombela/Nelspruit Campuses) and Limpopo (Polokwane Campus). Although the majority of the respondents were from the Tshwane region, respondents represented three different provinces of South Africa. A number of female academics from these areas formed part of the population. The two institutions were chosen because both have complicated employee relations and both have experienced either labour unrest or the threat of labour unrest in the recent past. Both institutions are still striving to achieve their equity targets as prescribed by South African labour law.

Furthermore, they share the same history, since they have both experienced complicated mergers in the recent past. They represent the two major types of institutions of higher learning in South Africa, namely a comprehensive university and a university of technology. Both offer a wide variety of subjects and levels of tuition, from national diplomas and bachelor's degrees, to various postgraduate degrees, culminating in doctoral degrees. Hence the respondents in this study represent a broad and diverse group of female academics.

In terms of biographical data, the respondents ranged in age from 21 to 64 years, with a mean age of 42,35 and a standard deviation of 10,42. This information indicates that the majority of the respondents were between the ages of 32 and 52 years. Regarding work experience, the respondent with the least experience had only one year of experience, whereas the respondent with the most experience had 37 years of experience as an academic. The mean for "work experience" was 9,5 years. In terms of the ethnic group to which respondents belonged, 88% of the respondents were white, 10% were black, 0,6% represented the Asian group and 1,1% were recorded as belonging to the Coloured group. The majority of the respondents therefore represented the white and the black population groups of South Africa. The majority of respondents were married (65%) or single (19%). A significant percentage were divorced (9%). Significantly lower percentages of respondents fell into the "living



together" (3%), "separated" (2%) and "widowed" (1%) categories. Respondents mostly had either a master's degree (37%) or a doctoral degree (30%). A somewhat smaller percentage (27%) had a BTech or Honours degree. Since only 6% held a three-year qualification, it can be concluded that on average the target group was a highly qualified group of female academics. The target group represented a broad range of academic jobs. The majority of respondents were lecturers (41%), senior lecturers (23%) or junior lecturers, junior researchers or research assistants (12%). Associate professors (3%), professors (6%) and academic managers (12%) made up the rest of the respondents. The participants were employed at a number of different campuses, in a geographical area extending from Gauteng to Mpumalanga and Limpopo. The majority of respondents were employed at the Comprehensive University (55%). The respondents from the University of Technology were dispersed geographically, but almost half (22% out of the 45% of the sample that came from this institution) were employed at the University's Pretoria West Campus.

A census was conducted and the entire population of permanent female academic staff members at the two institutions were asked to participate in the research study.

## 4 Results and discussion

Table 1 indicates the average age of the respondents. They ranged in age from 21 to 64 years, with a mean age of 42,35 and a standard deviation of 10,42. This information indicates that the majority of the respondents were between the ages of 32 and 52 years.

**Table 1**  
**Descriptive information on the age of the target group (n=187)**

	Minimum	Maximum	Mean	Standard deviation
<b>Age</b>	21	64	42,35	10,421

### 4.1 Validity

The validity of the three questionnaires was tested by means of factor analysis. The initial eigenvalues of the Maslach Burnout Inventory were inspected to determine the number of factors to use for the factor analysis. Initial eigenvalues with a total value higher than 1,0 indicate a strong extraction (Pallant 2001). All factors with eigenvalues below 1,0 were considered insignificant. Four factors were found to have eigenvalues (Kaiser criterion) exceeding 1,0. This four-factor model accounts for 54,06% of the total variance. In this extraction, factor loadings greater than 0,3 were considered to be sufficient to assume a strong relationship between a variable and a factor (Pallant 2001). There were no items with factor loadings less than 0,3. Therefore all items were retained for further analysis. Factor 1 corresponds with the exhaustion subdimension of the Maslach Burnout Inventory and accounts for the most variance (4.5%) after rotation of the factors. The second factor accounts for 1,9% of the total variance and corresponds with the reduced professional efficacy subdimension. Factor 3 accounts for 4.1% of the total variance and corresponds with the cynicism subdimension. A number of items do not correspond with the original subdimensions as defined by Maslach and Leiter (1997). After the factor analysis had been performed, a score was calculated for each subdimension by adding all the items comprising each subdimension to obtain a total score for each. The results of the principal axis factor analysis support the three-factor solution found in previous studies, thereby supporting the validity of the scale.

Regarding the Utrecht Work Engagement Scale, three factors were found to have eigenvalues (Kaiser criterion) exceeding 1,0, although the third factor only just made the cut according to this criterion. This three-factor model accounts for 61,9% of the total variance. The extremely strong loading on the first factor could indicate the possibility that a single factor was operating. The Utrecht Work Engagement Scale model is based on three components of work engagement, namely vigour, dedication and absorption. The initial findings supported the existence of three factors (Schaufeli & Bakker 2003). Since there were no items with factor loadings of less than 0,3 on all factors, all items were retained for further analysis. Three clear factors emerged. Although three factors emerged as suggested by the theory, these items did not correspond perfectly to the items defined by Schaufeli and Bakker (2003) as belonging to each of the questionnaire subdimensions. Factor 1 had the most items loading on the scale and accounted for the biggest variance (6%) after rotation of the factors. The second factor, which also had a number of strong items loading on the factor, accounted for 3% of the total variance. Factor 3 accounted for 4% of the variance.

Regarding the Sense of Coherence questionnaire, nine factors were found to have eigenvalues (Kaiser criterion) exceeding 1,0. This nine-factor model accounted for 46,93% of the total variance. The inspection of Catell's scree test revealed that the graph levelled off at the third factor. Because Antonovsky (1987) identified three components of the SOC in his SOC model, it was decided to retain three factors for further investigation. A rotated pattern matrix was done, which indicated a clearer distribution between the three factors. Factor 1 corresponded with the comprehensibility subdimension of the SOC and accounted for the biggest variance (4,4%) after rotation of the factors. The second factor accounted for 3,8% of the total variance and corresponded to the meaningfulness subdimension. Factor 3 accounted for 3% of the total variance and corresponded to the manageability subdimension. A number of items did not correspond to the original subdimensions defined by Antonovsky (1987), and it is recommended that the structure of the SOC be reassessed in future studies.

Principal axis factor analysis with a direct oblimin rotation was used to investigate whether the factor structures of the three questionnaires could be replicated according to theoretical analysis. Prior to performing the factor analysis, the suitability of the data for factor analysis was assessed. The correlation matrices of each of the three questionnaires revealed a number of coefficients of 0,3 and above. The Kaiser-Meyer-Olkin value of each questionnaire exceeded the recommended value of 0,6 (Pallant 2001) (MBI = 0,84; UWES = 0,93; OLQ = 0,81). Bartlett's test of sphericity was statistically significant ( $p = 0,000$ ) and the sample size was greater than the recommended 150 respondents ( $n = 187$ ) (Pallant 2001). The data were therefore considered suitable for a factor analysis.

## **4.2 Reliability**

Cronbach's alpha values were calculated for the subdimensions and total scores of the Maslach Burnout Inventory – General Survey, Utrecht Work Engagement Scale and the Sense of Coherence questionnaire respectively, as shown in Table 2. A Cronbach's alpha of 0,7 or more is an indication of a reliable scale (Nunnally & Bernstein 1994; Pallant 2001). The Cronbach's alpha values for the Maslach Burnout Inventory were all acceptable. Reduced Professional Efficacy was just below 0,7, at 0,68. This is a very small deviation, however. All the other Cronbach's alphas were well above the 0,7 point, ranging from 0,8 to 0,9.

**Table 2**  
**Scale reliabilities (Cronbach's alpha), means and standard deviations of the total scale and subdimensions of the Maslach Burnout Inventory (n = 187)**

Scale	N of items	Mean	Standard deviation	Coefficient alpha
Total Maslach Burnout Inventory	16	36,79	15,96	0,89
Exhaustion	5	14,74	7,57	0,90
Cynicism	5	13,33	7,36	0,81
Reduced Professional Efficacy	6	8,72	5,34	0,68

Regarding the Cronbach's alpha for the Utrecht Work Engagement Scale, Vigour scored slightly below the 0,7 mark. The other dimensions scored from 0,75 to 0,87, as indicated in Table 3.

**Table 3**  
**Scale reliabilities (Cronbach's alpha), means and standard deviations of the total scale and subdimensions of the Utrecht Work Engagement Scale (n = 187)**

Scale	N of items	Mean	Standard deviation	Coefficient alpha
Total Utrecht Work Engagement Scale	17	4,11	0,98	0,87
Vigour	6	4,18	1,0	0,64
Dedication	5	4,12	1,2	0,83
Absorption	6	4,19	1,03	0,75

The Cronbach's alpha for the Sense of Coherence questionnaire ranged from 0,51 to 0,90, as depicted in Table 4. Caution will be exercised when making interpretations regarding the manageability dimension, as the Cronbach's alpha is significantly lower than the other scores.

**Table 4**  
**Scale reliabilities (Cronbach's alpha), means and standard deviations of the total scale and subdimensions for the Sense of Coherence (n = 187)**

Scale	N of items	Mean	Standard deviation	Coefficient alpha
Total Sense of Coherence	29	128,22	15,36	0,90
Comprehensibility	11	46,43	8,55	0,65
Manageability	10	47,61	8,5	0,51
Meaningfulness	8	40,10	7,65	0,83

Based on these results, it was decided to retain all three constructs, with their respective subdimensions.

### **4.3 Pearson's correlation analysis**

In this section, the relationship between age and the levels of burnout, work engagement and sense of coherence is explored. Field (2005) acknowledges that many measures of effect sizes have been proposed, the most common of which is the Pearson's correlation coefficient ( $r$ ). Although ( $r$ ) is traditionally used as a measure of the relationship between two variables, Field (2005) believes that it is also a very versatile measure of the strength of an experimental effect. Field (2005) concedes that many researchers find it difficult to imagine how the humble correlation coefficient can be used in this way. The American Psychological Association shares Field's conviction

and recommends that the utility of effect sizes is such that the results should now be included in all published work (Field 2005). A summary of the results of Pearson's correlation matrix for the age of the respondents is provided below in Table 5.

**Table 5**  
**Pearson's correlation matrix for age on the total scale and subdimensions of the Maslach Burnout Inventory, Utrecht Work Engagement Scale and Sense of Coherence**

Total scores and subdimensions	Pearson values (exact Sig. 2-tailed age)	
	r-values	p-values
Burnout	0,054	0,464
Exhaustion	0,013	0,125
Cynicism	0,072	0,326
Reduced professional efficacy	-0,098	0,182
Work engagement	0,132*	0,071
Vigour	0,159*	0,030*
Dedication	0,054	0,461
Absorption	0,195*	0,007*
Sense of coherence	0,113*	0,124
Comprehensibility	0,182*	0,012*
Manageability	0,050	0,499
Meaningfulness	0,036	0,621

\*r ≤ 0,10; \* p < 0,05 (Indicating significance)

Maree (2007:212) explains that in the case of a relationship between two nominal variables, the analysis should involve a two-way frequency table incorporating values for them. Maree (2007:212), Field (2005) and Cohen (1988) offer the following guidelines for the interpretation of effect size: r-value ≤ **0,10**: small effect; r-value ≤ **0,30**: medium effect, and r-value ≤ **0,50**: large effect. These guidelines were followed in the interpretation of the results of this study. The symbol used to indicate significance, small effect, is \*. As only a small effect manifested, it was not necessary to provide additional symbols. An exploration of the manifestation of burnout, work engagement and sense of coherence across the various demographical groups produced a number of findings.

### **Hypotheses 1a–c**

Table 5 indicates that no significant relationship exists between age and any of the three subdimensions of burnout, namely exhaustion (r = 0,013, p = 0,125), cynicism (r = 0,072, p = 0,326) and reduced professional efficacy (r = -0,098, p = 0,182). Hence, it can be concluded that exhaustion (hypothesis 1a), cynicism (hypothesis 1b) and reduced professional efficacy (hypothesis 1c) were not related to the age of the respondents. This implies that older female academics are not expected to manifest with higher levels of burnout than younger academics.

### **Hypotheses 2a–c**

Correlations were identified between age and two of the Utrecht Work Engagement Scale subdimensions, namely vigour (r = 0,159, p = 0,030) and absorption (r = 0,195, p = 0,007). Hence, vigour (hypothesis 2a) and absorption (hypothesis 2c) are related to the age of the academics, and the hypotheses are accepted. Dedication (hypothesis 2b) is not related to age. This finding is similar to that of Schaufeli and Bakker (2003:18).

### **Hypotheses 3a–c**

Comprehensibility is often seen as the core dimension of sense of coherence. A correlation, namely  $r = 0,182$ ,  $p = 0,012$ , was identified between age and one of the subdimensions of sense of coherence, namely comprehensibility (3a). Hypothesis 3a is therefore accepted. Manageability (hypothesis 3b) and meaningfulness (hypothesis 3c) are thus not related to age.

### **Hypotheses 4 a–c**

The results provide partial support for hypotheses 4b and 4c. Age correlated with the total scores for work engagement ( $r = 0,132$ ,  $p = 0,071$ ) and sense of coherence ( $r = 0,113$ ,  $p = 0,124$ ), as both  $r$ -values were above 0,10, although the  $p$ -values were not below 0,05. Hypotheses 4b and 4c are therefore partially accepted. Age did not correlate with burnout levels ( $r = 0,054$ ,  $p = 0,464$ ). The results mirror Schaufeli and Bakker's (2003:18) findings, which are discussed in paragraph 2.5.

To summarise, the implications are that the older female academics are, the higher their scores on comprehensibility, vigour and absorption will be, and to a lesser extent on the total work engagement and sense of coherence scales as well. These correlations are all positive, which indicates that the higher the score on one variable, the higher the score on the other variable will be as well. It should be noted that although these correlations are significant, the size of the  $r$ -value (size of the correlation) is small.

For the purpose of the discussion in this article, it is noteworthy that no correlation between age and burnout was identified; hence, older academics are not expected to present with higher levels of burnout in the workplace.

## **5 Discussion**

The university that manages to attract and retain the best human capital will succeed in creating the best research and publication reputation. As qualified and experienced academics are scarce, it is strategically important to retain staff. Little awareness of the gendered nature of the academic world exists, however. Discriminatory practices in terms of gender and age are a reality in most South African universities. The cumulative effect on female academics of evaluation criteria, conventional chronological career-stage expectations, publication traditions and other slight inequities, resulting in the leaking pipeline phenomenon, are largely ignored (Bailyn 2003). This discussion focuses on the intersection of being a female academic, age (being in the middle to later career stages) and the psychological work experience. Each of these dimensions will be elucidated.

*Age, career stage and bias in academia:* In terms of the age dimension, Meyer (2007) defines middle career as the period between the ages of 40 and 60, and late career as the period over the age of 60. Hall and Mirvis (1995) argue that workers in middle and later career and life stages represent an untapped pool of human resources. This article highlights the potential competencies that older female academics represent to a university and offers new insights into ways in which the institution could unlock this potential. Hall and Mirvis (1995) used the term "protean career" to refer to a career based on self-direction in the pursuit of psychological success in one's work. They believe that there are many benefits to the protean career concept for older workers, say senior academics and career researchers. Flexibility and autonomy are very important to the older worker, as the older worker is free to pursue

more flexible career options. Since the search for self-fulfilment is dominant, personal and career roles are highly interrelated. Flexibility of space often evolves into a "working from home" scenario for the older worker. This seems to be specifically prevalent for academics focusing on postgraduate supervision and research. Here the organisation can provide a context in which individual academics are able to pursue their personal research interests.

Behavioural scientists have been advocating a revised view of productive ageing, including dimensions of wellness, involvement, productivity and fulfilment, often referred to as the age revolution. The concept of meaningful ageing, defined as "individually constructed cognitive system, grounded in subjective values and capable of endowing life with personal significance and satisfaction" is also enjoying more popular acceptance (Wong 1989:519). The results of the study being reported here do indeed confirm this viewpoint as relevant in terms of older female academics. Schaufeli (2004) reported a weak positive relationship between work engagement and age. Wissing and Van Eeden (2002) also observed clear indications that older employees score higher on various indexes of psychological well-being. This is in accordance with the trends identified in the existing literature (Antonovsky & Sagy 1985; Schaufeli 2004; Wissing & Van Eeden 2002). Labour market trends indicate that older workers play an increasingly important role in the workforce today (Eicher, Norland, Brady & Fortinsky 1991; Theodore & Lloyd 2000). The work orientation of older female academics is therefore of theoretical and practical interest. Clark, Oswald and Warr (1996) reported higher levels of job satisfaction in workers over 40 and suggest that this is because of increased coping capacity, and greater stability and ego strength with age. Theodore and Lloyd (2000) found that as workers age, they become more inwardly focused and invest their efforts in the enjoyment of the process, the quality of the experience and emotional connectedness. Oshagbemi (1997) found that women tend to be slightly more satisfied with their academic careers after the age of 45 than their male colleagues.

*Work engagement:* Traditionally, middle to late career stages have been viewed as a period of mastery and maintenance, followed by gradual disengagement. This article argues that, in the current organisational context, the period of "disengagement" occurs at a much later stage than was generally accepted, or does not manifest at all. In contrast to the traditional career theory that refers to "disengagement" in older employees, Schreuder and Theron (2001) refer to "differential disengagement", whereby people retire only from certain aspects of their jobs, but continue to develop in more desirable activities. This can be equated to Hall and Mervis's (1995) short learning cycles in which the older employee continuously self-reflects, assesses, learns about her- or himself and adapts accordingly. Older female academics could typically choose to remain engaged in part-time lecturing, supervision of postgraduate students and research activities, even after the mandatory retirement age has been reached. The individual benefits psychologically and financially, the university retains valuable skills, may gain a competitive advantage, and South Africa benefits in terms of maintained research activity, transfer of knowledge and skills and tax income earned from economically active professionals. Female academics in the middle and late career stages are far more engaged than was generally accepted. In the light of the empirical evidence in this study, one would expect that the older the female academic, the more vigorous, energetic and resilient she will be while working. Her willingness to invest effort in her work, and to persist even when she finds it difficult, will increase with age. There is a positive relationship between being an older female academic and being absorbed, fully engaged and happily engrossed in your work. Regarding

older female academics' scores on the sense of coherence subdimension "comprehensibility", higher scores were recorded with increased age. This implies that their understanding of the internal and external environments as ordered and consistent is better than that of younger female academics. It is arguable that in the turbulent higher education environment in South Africa it is critical for academics to have the ability to make cognitive sense of the environment.

*Intersection of the concepts:* In the past, older academics faced discriminatory stereotypes such as being "frail", not "belonging" in the workforce, desiring only leisure time, having no interest in training and development opportunities, and being in a state of "disengagement" from work and the world (James, Besen, Matz-Costa & Pitt-Catsouphes 2010) In this study, a significant positive relationship was found to exist between the employees' years of employment as academics and the comprehensibility subscale of sense of coherence. This means that the longer a female academic has been employed in that capacity, the higher the expectation that she will understand the demands of the job on a cognitive (rather than an emotional) level. This is in accordance with the trends identified in the literature review. Antonovsky and Sagy (1985) hypothesised that, because of the development of the female academic's overall personality, a strong sense of coherence will have developed by the age of 30 and the older the female academic, the stronger her sense of coherence is expected to be.

Hickson and Oshagbemi (1999) studied the effect of age and work experience on the satisfaction of academics (male and female) with teaching and research. The surprising result of their research was that the number of years' experience had a different effect on academic teaching staff than on academic research staff. The job satisfaction of academic teaching staff declined with increased years of service, while the job satisfaction of academic research staff increased with the number of years of experience.

There is no doubt that an academic career holds specific challenges for the female academic. As it is a job in which the boundaries between professional and organisational life on the one hand and personal life on the other are often blurred, it is particularly difficult for a person with care-giving responsibilities outside the higher education institution to compete on an equal basis. When the challenge of academic life is further complicated by the negative attitudes that older employees face, the problems they experience increase exponentially. As the typical female career path follows a slightly different pattern from that of most males, career stages are typically encountered at a somewhat later stage. In an academic community where 60 is currently the enforced retirement age, it is no wonder that a "leaking pipeline" is experienced and female academics are absent from the higher levels of academic institutions. By the time they have completed their doctoral degree and developed sufficiently as academics to be promoted to professorial levels, they are deemed too old for the profession. It is strongly recommended that the results of this study, namely that older female academics are actively engaged in academic life and in their careers, be considered by senior management of HEIs in South Africa. The only way in which the problem of erosion of female staff through academic ranks can be addressed is through a serious rethinking of what constitutes "equitable" and what constitutes "fair" in terms of the female academic career path in South Africa.

To recapitulate, older female academics represent a valuable pool of untapped resources in the South African context. HEIs in South Africa compete with one another for experienced, qualified and engaged academics. The empirical evidence in this study proved that the older the female academic, the higher her expected level of work engagement. There are, however, specific challenges faced by this group of

employees, and HEIs that take these challenges into account and manage to create career paths that enable female academics to overcome them stand to gain valuable ground over competing institutions. The question to be answered is, what actions would be necessary to create an environment in the HEI that would enable older female academics to achieve their full potential and solve the “leaking pipeline” phenomenon?

Based on the literature review and the empirical evidence, a number of recommendations can be made for the career management of female academics in South African universities:

- 1 South African universities need to rewrite their employment policy to encourage older women to remain employed, by abolishing the mandatory retirement age of 60 from all employment policies. Arguably, as the female career path often develops at a slower pace than that of their male colleagues, owing to traditional care-giving responsibilities, the mandatory retirement age seems to have an even more negative effect on female staff members than on their male colleagues.
- 2 Consider alternative employment contracts, for example the protean career. Flexibility of space, including “working from home”, enables older employees to remain productive. Universities should follow the international example and create attractive new forms of employment, in order to attract and retain experienced academics. Allowing for flexibility in employment makes it easier for women, as primary caregivers, to meet the multiple role expectations they face.
- 3 Universities should create academic leadership development programmes, specifically to encourage younger female academics to strive towards the higher levels of academia. These should include academic management options, for example becoming programme coordinators, heads of departments and deans of faculties.
- 4 Ensure challenging work assignments for academics of all ages in terms of research projects and publication possibilities, in order to nurture work engagement. The management of emotions, identity and adaptability, along with an appropriate level of challenge in the work environment, is critical to ensure psychological success at this life stage.
- 5 Include “age issues” in diversity training programmes. These programmes should be holistic in nature and address the double jeopardy faced by younger female academics, as well as the age discrimination increasingly faced by older female academics.
- 6 Older women should be recognised, valued and rewarded for their relational work, especially in team contexts. This talent in terms of relational work should not be overlooked and opportunities for continuous learning for the older employee should be a strategic priority.
- 7 South African universities should consider the creation of “research incubators” to assist female academics to become productive researchers and publishers of their research. The incubators should not only focus on the very young, but should include “novice” researchers, returning to an academic career after childrearing.
- 8 Traditional timetables for promotion should be extended to provide for the typical female career path. Employees should be afforded the opportunity for promotion at an older age and at later career stages.



## 6 Limitations and implications for future research

As with all studies, the study on which this article is based was also subject to constraints. Firstly, although all the female academics were repeatedly requested to participate in an effort to improve the response rate, only 190 women responded. The statistical analysis would have benefitted from having more respondents. Secondly, the majority of respondents were from the Tshwane region. It is recommended that the study be replicated in other South African universities to confirm the results. Thirdly, only female academics participated in the study. Future research should also examine the generalisability of these results to employees in different organisational settings. A qualitative research design, in which respondents can share their personal experiences, would also add value and offer a deeper understanding of the work experience of older female academics in South Africa.

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