Professional vitality and career success: Mediation, age and outcomes

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ABSTRACT

We propose a model that explains the complex phenomenon of successful career at work, and focuses on the antecedents of professional vitality at the workplace. The model sheds light on the role of professional vitality as an essential ingredient for successful careers. Using a survey design, we tested our model with a sample of 545 managers and professionals. The findings suggest effects of career attitudes on career outcomes, mediated by professional vitality. The relationship between professional vitality and age at work environment forms an inverse U shape curve, peaking at age of fifties, an optimistic note for the global aging workforce.

1. Introduction

Work is central for the lives of many people. For some it gives the meaning to their existence and identity (Forest, Mageau, Sarrazin, & Morin, 2011; Kram, Wasserman, & Yip, 2012; Vallerand & Houlfort, 2003). Work is important for people's subjective well being and can be related to a host of benefits for the employees and the firm (Russell, 2008). Subjective well being refers to people's perceptions of their existence or their subjective view of their life experience; it represents people's cognitive and affective evaluations of their life and expresses an ongoing state of psychological wellness (Diener, Lucas, & Oishi, 2002). One of indicators of subjective well being is subjective vitality, where vitality represents positive feelings of aliveness, spirit and energy (Peterson & Seligman, 2004). Palmer, Dankoski, Smith, Brutkiewicz, and Bogdewic (2011) see professional vitality as a synergy between high satisfaction, productivity and engagement that allows faculty members to maximize professional success and achieve goals following institutional goals – a definition that can be adapted to different professional domains.

A related construct to subjective vitality is vigor, where vigor refers to an individual's feeling of physical strength – emotional energy and cognitive liveliness (Shirom, 2011). Additional constructs close to vitality in the work context are thriving and zest. Thriving at work consist learning and sense of vitality (Porath, Spreitzer, Gibson, & Garnett, 2011). Zest is a positive feature reflecting an individual's approach to life with anticipation, energy and excitement in which in the work context is highly correlated with work satisfaction and life satisfaction (Peterson, Park, Hall, & Seligman, 2009).

Vitality in work is an important phenomenon, due to its associations with several organizational outcomes: safety, organization values, organizational commitment (Dejoy, Della, Vandenberg, & Wilson, 2010); job performance (Carmeli, 2009); innovation (Carmeli & Spreitzer, 2009); creativity (Kark & Carmeli, 2009); possible burnout (Vallerand, Paquet, Philippe, & Charest, 2010), and agility (Dries, Vantilborgh, & Pepermans, 2012). Following Fritz, Lam, and Spreitzer (2011), it is an important phenomenon because workers' energy is the “fuel” that enables successful operations and promotes performance in organizations (Dutton, 2003).

We contend, that in a similar way that the metaphorical “fuel perspective” of vitality at work is related to successful organizational operations, professional vitality can also serve as the “fuel” for a successful career. We are particularly interested in how professional vitality is related to career success measures, like position in organizational hierarchy, career satisfaction, life satisfaction and work withdrawal. In addition we explore the potential mediation phenomenon of professional vitality. We are also interested how professional vitality is related to age, especially at both early and late career stages. Due to the aging workforce around the world (Greller & Stroh, 2004), we look also at how long professional vitality lasts, in particular bearing in mind the difficulties people experience in forced retirement (Kets de Vries, 2003). The paper presents professional vitality, then introduces the conceptual framework of the research, followed by hypothesis development for the model – based on the antecedents (in career context) to professional vitality, the mediation of professional vitality and the outcomes (career success aspects). We discuss the theoretical, managerial and worker implications, ending with the research's strengths and limitations.
2. Theoretical background and hypotheses development

The construct ‘professional vitality’ was introduced to the literature by Harvey (2002) who studied the vitality of school principals in the United States. Professional vitality is a multidimensional feature and is defined as “a characteristic possessed by individuals who are able to consistently perform the work of their chosen profession with passion, vigor, facility and satisfaction” (Harvey, 2002, p. 28). Where the central component of professional vitality is passion at work, for Harvey, passion is “a compelling inner desire to enhance the lives of children/students through one’s own contributions as an educational leader” (Harvey, 2002, p. 29) – a definition that can be adapted to different professions and organizational settings. Harvey’s (2002) concept of passion is very similar to Vallerand et al. (2003) and Vallerand (2010) definition of passion as a strong inclination toward an activity that people like, find important and in which they invest significant time and energy.

Vigor is defined as “energy of actions and is enacted largely out of passion to make a difference. This energy of vigor takes the form of mental, physical and emotional exertion demonstrated by school leaders in the performance of their jobs” (Harvey, 2002, p. 32). This definition is similar to Shirom’s (2011, p. 50) definition as “individuals’ feelings that they possess physical strength, emotional energy and cognitive liveliness, and represents a moderate-intensity affect experienced at work.”

Facility as defined by Harvey (2002, p. 35) is “the ability to effectively harness the energy of one’s passion into actions that display the savvy and confidence of craftsman.” Harvey notes that the facility or skill acquired throughout a principal’s career serves to enhance performance and contributes to comprehensive professional vitality. This is a feature that we contend can be applied to any profession. In similar line of thinking as Harvey (2002), we posit that vital professionals at work can apply their skills in stressful situations and environments and carry out their work with the confidence that they have the capabilities and knowledge to carry out successfully their jobs. The last dimension of professional vitality is job satisfaction.

We developed our conceptual framework on current career theory (Arthur, 2008; Sullivan & Baruch, 2009) which emphasizes subjective well being aspects of career success, combined with Hobfoll’s (1989), Hobfoll’s (2002) Conservation of Resources (COR) theory. COR theory reflects reactions of people to stressful situations and the way they handle these events, and is based on resources available to them to cope with stressful situations (Galin & Schieman, 2012; Walsh, 2011). Due to the fact that the work environment is a stressful surrounding, e.g. in Europe 28% of the employees noted their work as ‘very stressful’ and in USA the figure was 26–40% (Sonnentag & Frese, 2003), we expect that COR framework will add additional insights on the career success subject.

One of main principles of COR theory is that people attain and manage resources that they highly regard and value. Individuals aim to maximize resources that mostly contribute to their general development. Previous work on well-being, job satisfaction, and burnout has successfully supported the COR model (Halbesleben, 2006; Wright & Bonett, 2007), thus, we employ this theory to study career success by looking at the subjective aspects of career success like professional vitality and career satisfaction in dynamic work environments.

Stress is created when people experience threat or actually loose valuable resources. Resources are ‘… those objects (e.g. car, house), conditions (e.g. job security, good marriage), personal characteristics (e.g. social aplomb, mastery), or energies (e.g. money, knowledge, favors owed) that are valued by the individual or that serve as means of obtaining that which is valued by the individual’ (Hobfoll, Freedy, Lane, & Geller, 1990, p. 466). Hobfoll (2002) claims that people with higher levels of resources will handle stressful situations and resolve problems better than people with lower levels of resources. Resources enable individuals to manage challenges and take advantage of opportunities (Hobfoll, 2002; Wright & Bonett, 2007). Within the work world, an employee’s resources can be the physical, psychological, social, and organizational aspects of the work role or institutional resources (Zeitz, Blau, & Fertig, 2009). Employees will invest efforts and energy in order to meet work requirements and achieve desirable results (Cheung & Tang, 2007). There is no single ‘best practice’ to manage resources, and people differ in their ability to do so (Hochwarter, Perrewe, Meurs, & Kacmar, 2007). Employees can apply different level of efforts, utilize different organizational outfits or assistance (Hochwarter, Laird, & Brouer, 2008). COR framework can also explain employees performance in the aspects of in role performance, creativity and implementation of new ideas (Ng & Feldman, 2012).

The COR literature does not discuss how resources can be a factor in career development and progress, where resources may be instrumental. For example, employees may gather and look for any additional resources within the organization in order to compensate for the erosion of resources in daily organizational activities (Hobfoll, 2011). Employees manage their resources in a way such that some of their overall resources will contribute to their general growth (Wright & Bonett, 2007). Higher job demands require greater amounts of resources, and may thus divert these resources away from career progression. Increased resources would enable better coping with job demands (Hobfoll, 2011), and would probably allow for the diversion of resources to enhance career progress and improve well being. Under theories of contemporary careers, which are person oriented and driven by inner values (Briscoe, Hall, & Frautschy DeMuth, 2006) and as inner personal values affect the selection of resources in order to cope with different situations (Hobfoll, 2002; Morelli & Cunnigham, 2012). We have focused on personal resources that are career related, so employees can apply them in order to enhance their subjective well being and success at work. For example, drawing energy from personal attitude for career or career commitment may mean adding efforts and time beyond the period dedicated to current tasks, and increasing the devotion applied to career development.

The model depicting the antecedents (resources) based on internal employees resources, which are related to the professional vitality, appears in Fig. 1.

2.1. Antecedents of professional vitality

2.1.1. Protean career attitude

Protean career attitude (Prot A) is based on inner values (Hall, 2002), which are a powerful drive for an individual’s behavior (Roehach, 1973; Sagiv & Schwartz, 2000). The importance of this career attitude was reiterated more recently (Briscoe et al., 2006), and was associated with different aspects of career success (Baruch & Quick, 2007), though the impact may be different for external versus internal success (Singh, Ragins, & Tharenou, 2009). Based on inner values, employees can derive additional energy and compensate for resource erosion following work activities. This additional power maybe applied to career path development, activities or toward an individual’s well being.

2.1.2. Career commitment (CC)

Career commitment is defined as “one's attitude towards one's profession or vocation” (Blau, 1985, p. 278) or “one’s motivation to work in chosen vocation” (Carson & Bedeian, 1994, p. 240). Following the work of Lapointe, Vanderbergh and Panaccio (2011) on
organizational commitment and the COR framework, the same line of thinking can be applied to career commitment especially in the context of affective commitment, which can act as an energizing force in the work sphere. Individuals high in affective career commitment desire to remain in the same career field, identify with it and are personally fulfilled by their career (Meyer, Allen, & Smith, 1993). Affective commitment provides direction and purpose to individuals’ work (Irving & Coleman, 2003; Lapointe et al., 2011). It enables employees to function at low energy and without fearing loss of resources, mainly by strengthening the sense of autonomy at work (Lapointe et al., 2011, Meyer & Maltin, 2010) which is noted by Hobfoll (2002) as an important resource that people value and preserve. Based on the two inner resources of protean career attitude and career commitment that are available to employees in their working life, we propose:

**H1a.** There is a positive relationship between protean career attitude and professional vitality.

**H1b.** There is a positive relationship between career commitment and professional vitality.

### 2.2. Relations of professional vitality to objective and subjective career aspects

Following the discussion of the relationship between the objective and subjective aspects of career success (Arthur, 2008 and Hall & Chandler, 2005), we investigated the relationships of professional vitality with: the position in organizational hierarchy (objective career aspect), the career satisfaction, the life satisfaction and the turnover intentions (subjective career aspects).

Regarding the relationship of professional vitality with hierarchical position, we contend that the relationship will be positive. This is based directly on the COR theory principle that states that people try achieve additional resources to protect current resources and to guard against potential threats. Employees try to protect their well being by aiming at a higher organizational position, in which organizational resources are more available and can be more easily applied. For example, a higher organizational position enables employees to create and lead new projects or tasks that follow the inner values of the employee.

This drive for a higher position can be explained by an additional COR principle, that people with a large resource pool can risk resources where there are prospective resources to gain (Hobfoll & Shirom, 2001). For example, employees with high career commitment and protean career attitude will take a risk and carry out challenging projects or tasks. They will feel safe in their capabilities, skills and inner drives (their reservoir of resources) to finish these projects/tasks successfully. When finished successfully, these achievements will probably be highly appreciated by the organizational management- and apparently will bring them to higher position in the organization.

Passion is the major component of professional vitality (Harvey, 2002). Passion, according to the work of Vallerand et al. (2007) demonstrates a positive relationship with subjective well being. Further, if one considers professional vitality a manifestation of personal well being (Ryan & Frederick, 1997), higher well being at work is related to higher career satisfaction and life satisfaction, which are dimensions of well being in work (Russell, 2008). This positive association between professional vitality and career and life satisfaction – supports previous work that found relations between happiness/life satisfaction and vitality or flourishing (Clark & Senik, 2011).

Regarding turnover intention, following the COR principles that people tend to minimize the stress due to loss of valuable resources, employees can chose the strategy of withdrawal from the organization in order to achieve more resources in other organization, or reduce the threat to their current well being, mainly by achieving increased well being in other organizations.

Thus, it is proposed that:

**H2a.** There is a positive relationship between professional vitality and position in organizational hierarchy, career satisfaction and life satisfaction.

**H2b.** There is a negative relationship between professional vitality and turnover intentions.

### 2.3. Mediation of professional vitality

In order to identify possible mediation paths between antecedents (resources available to the worker) and outcomes (career success facets), professional vitality should be related to employee resources (antecedents) and career outcomes. Following hypothesizes H1a and H1b, protean career and career commitment are related to professional vitality and career success. Concerning the relationship professional vitality with career success aspects, it can be suggested that the components of professional vitality (passion, vigor, skillfulness and job satisfaction (Harvey, 2002), will enable employees to divert part of their resources to do a better job, and to invest additional energy and time to accomplish projects and task in spite of all difficulties in work life. Employees high in vitality develop more creative solutions to work-related problems (Kark & Carmeli, 2009), tackle problems in innovate ways (Carmeli & Spreitzer, 2009), and these individuals tend to work more safely – (DeJoy et al., 2010). The above leads to successful achievements, gaining organizational appreciation and leading to additional tasks and projects, increasing the satisfaction and well being of the employee in work.

Thus we propose:

**H3.** Professional vitality mediates the relations between protean attitude to career, career commitment and the position in hierarchy, career satisfaction, life satisfaction and turnover intentions.
2.4. Professional vitality and age

Subjective well-being, happiness and their relationships to age are of great interest lately mainly due to the aging workforce around the world (Baugh & Sullivan, 2009; Blanchflower & Oswald, 2008; Blanchflower & Oswald, 2009; Easterlin, 2006; Van Langenhem, 2012). Studies usually find that human well-being (mostly expressed as life satisfaction) is a U shaped curve in developed countries (Oswald & Powdthavee, 2008).

Overall well-being is related to satisfaction with the various domains of life: work, health, family life or financial situations (Easterlin, 2006). Our interest is well being in work domain; therefore we look at professional vitality as an indicator of well being in workplace and as a function of age. We derive the curvature orientation of professional vitality based on the COR framework. At the younger ages, employees in order to protect their well being will try to acquire more work resources like achieving higher organizational position (in order to carry out more interesting and challenging projects). They will try to improve their skills, or build wider supporting social networks (to achieve lucrative projects, to get a larger share of organizational resources and materials or to get protective support in case of project failures). These processes can continue up to a certain age, and at a certain age the available resources (inner and situational) for the employee are harder to achieve or to apply. For example, older employees are less willing to focus on development and training (Kanfer & Ackerman, 2004). Some older employees find it difficult to adapt after organizational changes and their task performance is lowered (Niessen, Swarowsky, & Leiz, 2010).

Bearing in mind our perspective of career ‘lens’ and employees’ well being, it is interesting also to investigate career satisfaction as a function of age, an aspect rarely investigated. Negative relationships were found between organizational politics, negative social capital and career satisfaction (Grimaldi, Vigoda-Gadot, & Baruch, 2011). We thus can assume a curvature of averaged career satisfaction as a function of employees’ age.

Based on the COR framework, most of the personal resources are directed at survival in working life. Younger employees are less aware of organizational politics’ impact on work life. It takes them time to understand the ‘mechanics’ of organizational life and to build a supporting network. Regarding the effect of negative social capital, it takes time to recognize the harmful persons in the organization and to learn how to avoid them. Therefore at this period of time, career satisfaction might decline. It takes time to generate a positive social network or to understand and benefit from organizational politics. Employees’ skills are more effective and fewer resources are directed for their organizational survival and more are used for career development, and therefore their career satisfaction will increase. Based on this, we contend that the curvature of professional vitality as a function of age will be \( n \) shaped and the curvature of averaged career satisfaction will be U shaped such that:

\[ H_{4a}. \] Average professional vitality as a function of age will be \( n \) shaped.

\[ H_{4b}. \] Average career satisfaction as a function of age will be U form shaped.

3. Methods

3.1. Sample and procedures

The research target population included task or project managers employed within the high technology, engineering, and infrastructure sectors. The managers came from 21 organizations, 11 in the public sector and 10 in the private sector in Israel.

In developing the questionnaire in Hebrew, items originally developed in English were subjected to standard translation and back-translation procedures (Brilin, 1970). Responses from a pilot study with 38 individuals indicated that there was no confusion or lack of clarity. The full-scale study included the distribution of 1048 questionnaires survey. We accessed private sector companies by calling companies in high-technology parks in the central part of Israel and public organizations via a governmental web site for public organizations.

The response rate at the firm level was 30%, high for this level (Cycyota & Harrison, 2006). Of the 1048, 545 questionnaires were returned, accounting for a response rate of 52%, a figure above the norm of survey response rate in organizational research (Baruch & Holtom, 2008). A note about the survey was published on each organization’s internal web site, and employees were encouraged to participate in the survey. An additional 59 questionnaires were distributed directly to project managers enrolled in project management courses. The demographic characteristic of this direct collection group was similar to the group collected in the organizations, and we thus incorporated their responses into the sample.

The composition of the sample was as follows: 229 (42%) were public sector managers and 316 (58%) were private sector managers; 393 (72.1%) worked in the high-tech sector and 152 (27.9%) in engineering/infrastructure. Regarding gender, 427 (80.7%) were males and 102 (19.3%) were females. Average age of the participants was 44.02 (SD = 10.09) years. Survey respondents held a variety of positions within their organizations: 36 (7.4%) were in low managerial positions, and 32 (6.6%) were managers of single task/project. Seventy (16%) were team leaders, 81 (16.6%) were branch leaders (in charge of several teams), 130 (26.7%) were section managers, 74 (15.2%) were department managers, 26 (5.3%) were director general deputies, and 30 (6.2%) were in director general positions.

In the Israeli higher education system, universities are research oriented institutions awarding first, second, and third academic degrees. Colleges in Israel award practical engineer and first degree only, and are usually not research oriented. As for educational level, 928 (83.4%) had at least a bachelor’s degree, 152 (11.5%) had some college or professional training, and 41 (3.5%) had no college degree. Husbands and wives were excluded from this study.

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3.2. Measures

3.2.1. Career commitment

We used seven-item measure developed by Blau (1989). The respondents answered on 5-point scale ranging from strongly agree to strongly disagree. A sample item is: “I definitely want a career for myself in my current area”. The coefficient alpha for the scale in the study was .77.

3.2.2. Protean career attitude

We adopted the scale for ProtA from Baruch and Quick (2007). A sample item from this measure is: ‘I navigate my own career according to my plans’. The Likert scale ranged from 1 (highly dis-
agree) to 5 (highly agree). The corresponding coefficient alpha was 0.61 for five items, below the standard 0.70, but complying with the acceptable value of 0.60 in the initial phase of research (Nunnally, 1978).

3.2.3. Professional vitality

Professional vitality is defined as a characteristic of individuals who are able to consistently perform the work of their chosen profession with passion, vigor, facility, and satisfaction. This definition and the measure were developed by Harvey (2002), and the measure was used with permission, utilizing 14 of the original 18 items (four items were removed due to a lack of fit, as they tackled school principal’s aspects of work). A sample item is: ‘I am filled with energy throughout the workday’, measured on a 1–5 Likert scale with 1 = highly disagree to 5 = highly agree. The coefficient alpha for this measure was .83.

3.2.4. Career satisfaction

Career satisfaction was measured by five items (Greenhaus, Parasuraman, & Wormley, 1990). The respondents were asked to state to what extent they were satisfied with their advancement in their career on a 1–5 Likert scale with 1 (highly disagree) to 5 (highly agree). A sample item is ‘I am satisfied with the success that I have achieved in my career.’ The coefficient alpha for this measure was .86.

3.2.5. Life satisfaction

We used the scale that was developed by Diener, Emmons, Larsen, and Griffin (1985) and included five items. Sample item is: ‘In most ways, my life is close to my ideal.’ This was again measured on a Likert-like scale with 1 (highly disagree) to 5 (highly agree). The coefficient alpha for this measure was .84.

3.2.6. Turnover intentions

Turnover intentions were measured by the four item set developed by Farrell and Rusbult (1992), using the Likert scale of 1–5 (from highly disagree to highly agree). A sample item is ‘I often think about quitting’. The coefficient alpha for this measure was .90.

3.2.7. External progress in career

External progress in career was noted by position in organizational hierarchy, and was defined according to management level. The scale was from 1 (non-managerial job) up to 9 (director general).

3.2.8. Demographic variables

Demographic variables included personal data such as gender (male 0 and female 1), age measured in years, marital status (1 married and 0 unmarried) and education that was measured as an ordinal variable (1 secondary school, 2 above secondary school, 3 first academic degree, 4 master degree, and 5 PhD degree). In order to apply the educational variable in regression equations, we transformed the educational variable to a dichotomous variable, where education level up to first degree was designated the value of 1 and second and third degree were designated as value of 0.

3.3. Analysis

Due to the nested composition of our sample, we tested for the possible effect of nonindependence in responses from the same organization. The degree of nonindependence can be estimated by calculating the intra-class correlation coefficient using ANOVA analysis (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002; Klein & Kozlowski, 2000), where the group is treated as an independent variable in a one way, between subjects ANOVA. If the non-independence phenomenon is detected, a multilevel analysis is required (Dixon and Cunningham, 2006; Klein & Kozlowski, 2000). There is no agreed level for ICC(1) that implies multilevel analysis and in different fields, different ICC(1) thresholds are used. In organizational research, a cut-off level of ICC(1) is an unresolved issue and when to apply ordinary least squares analysis or when to apply multilevel analysis is still an open question.

In order to decide what type of analysis should be applied, we evaluated three parameters: ICC(1), ICC(2), and rwg. By considering ICC(1) as the main decision tool and by indicative perspective of ICC(2) and rwg parameters (Kenny et al., 2002; Klein & Kozlowski, 2000), we identified that ICC(1) of the different variables was in the range of 0.04–0.16, a figure below the 0.25 used as a cut-off level in areas like public administration and social work (Guo 2005; Heinrich & Lynn, 2001). The ICC(2) range is mainly below the level of 0.70 and several rwg’s are below the threshold level of 0.70 for applying multilevel analysis. Based on the fact that all our research variables are measured at the individual level and considering the low value of the ICC(1)’s, we decided to apply OLS regression analysis in our research.

An additional aspect tested was potential common method bias. To check for this, we employed the Harmon’s test following Podsakoff, MacKenzie, Lee, and Podsakoff (2003). We conducted a factor analysis, which showed that the model has no dominant factor (six factors were acquired in the analysis) and is thus less sensitive to such bias. Most of the knowledge in management and behavioral studies is based on studies that employ a single source, and while some correlations might be inflated, the use of this method is acceptable (Spector, 2006).

3.4. Hypotheses testing

Zero-order correlations were used to examine hypotheses H1–H3. Second, multiple hierarchical regressions analysis was utilized to test hypotheses H1–H2, where age, gender, marital status and education were used as controls. Hypothesis H3 was tested by the method proposed by Kenny, Kashy, and Bolger (1998), using three regressions: outcomes on the antecedents; possible mediator on the antecedents; and a two step hierarchical regression. Step one tests the effect of the outcomes on the possible mediator and the second step considers the effect of the potential mediator on the antecedents. Hypothesis H4 was tested by hierarchical regression and calculus analysis.

Table 1 presents descriptive statistics and zero-order correlations. Most of the intercorrelations hold in the expected directions and none of them exceeds the maximum level of 0.70, which is a good indicator for the absence of multicollinearity among the variables. Table 2 presents the different relationships between the antecedents and professional vitality. Table 3 presents the relationship between the various career success aspects (position in hierarchy, career satisfaction, life satisfaction and turnover intentions) and professional vitality. Table 4 presents the regression analysis related to the mediation test of professional vitality. Table 5 presents the functionality of averaged professional vitality as a multi function of controls, antecedents and age variables.

4. Results

Hypothesis H1a suggested that there is a positive relationship between protein career attitude (ProtA) and professional vitality. Based on results from Tables 1 and 2, there is a positive relationship between ProtA and professional vitality (r = .27, p < .01) and (β = .26, p < .001). Hypothesis H1b suggested that there is a positive relationship between career commitment and professional vitality. Based on results from Tables 1 and 2, there is a positive
relationship between career commitment and professional vitality ($r = .45$, $p \leq .01$) and ($\beta = .36$, $p \leq .001$). Therefore hypothesizes H1a and H1b are supported.

Hypothesis H2a suggested a positive relationship between professional vitality and position in organizational hierarchy, career satisfaction, and life satisfaction. Hypothesis H2b suggested a negative relationship between professional vitality and turnover intentions. As noted in Tables 1 and 4, there are positive relationships between professional vitality and position in organizational hierarchy ($r = .27$, $p \leq .01$; $\beta = .22$, $p \leq .01$), career satisfaction ($r = .30$, $p \leq .01$; $\beta = .33$, $p \leq .001$), and life satisfaction ($r = .37$, $p \leq .01$; $\beta = .23$, $p \leq .01$). Regarding turnover intentions, there is a negative relationship between professional vitality and turnover intentions ($r = -.21$, $p \leq .01$; $\beta = -.15$, $p \leq .01$), as shown in Tables 1 and 4. Therefore hypothesizes H2a and H2b are supported.

Hypothesis H3 suggested that professional vitality mediates the relations between protean career attitude, career commitment and position in organizational hierarchy, career satisfaction, life satisfaction, and turnover intentions. Following the approach of analyzing three regression equations, as presented by Kenny et al. (1998), we get the following.

Regarding position in organizational hierarchy, the following relevant results in the three regression equations were obtained: (as noted in Tables 2–4): (1) ProtA ($\beta = .19$, $p \leq .001$); (2) ProtA ($\beta = .26$, $p \leq .001$); (3) PV ($\beta = .22$, $p \leq .001$). The $\beta$ for ProtA is reduced from .19 to .13 for the third regression. Consequently professional vitality partially mediates the relations between ProtA and position in organizational hierarchy.

Regarding career satisfaction, we get the following relevant results in the three regression equations (as noted in Tables 2–4): (1) ProtA ($\beta = .33$, $p \leq .001$) and CC ($\beta = .24$, $p \leq .001$); (2) ProtA ($\beta = .26$, $p \leq .001$) and ($\beta = .36$, $p \leq .001$); (3) professional vitality ($\beta = .33$, $p \leq .001$). The $\beta$ for ProtA is reduced from .33 to .29 and the $\beta$ for CC is reduced from .24 to .18 implying that professional vitality partially mediates between ProtA and CC and career satisfaction.

Regarding life satisfaction, we get the following relevant results in the three regression equations (as noted in Tables 2–4): (1) CC ($\beta = -.36$, $p \leq .001$); (2) CC ($\beta = .36$, $p \leq .001$); (3) PV ($\beta = -.15$, $p \leq .01$). The $\beta$ for CC is reduced from -.36 to -.35. Consequently professional vitality partially mediates between CC and turnover intentions. Thus based on all of these results, hypothesis H3 is partially supported.

Hypothesis 4a suggested that the function of averaged professional vitality and age will be a $\cap$ shaped form. Hypothesis 4b suggested that averaged careers satisfaction as a function of age will be U shaped curvature. In order to reduce possible multicollinearity effect, we have ‘centered’ the age variable (Aiken & West, 1991). Regarding the curvature of averaged professional vitality we can see from Table 5 that the regression function (with the controls of gender, marital status and education) is significant ($F = 29.17$, $p \leq .001$). Based on results in Table 5 and by looking at the professional vitality age functionality (Step 3), we get the equation $Y(A) = .24 A - .10 A^2$.

By applying calculus rules: we differentiate the function $Y(A)$ with respect to age: $[Y(A)]' = .24 - .20 A$. In order to find the extremum, we differentiate once again: $[Y(A)]'' = -.20 A$ which applies that there is a maximum for the $Y(A)$ function, meaning that the age functional curvature is $\cap$ form shaped. Therefore hypothesis H4a is supported.

In order to find how long it lasts the ascending part of the vitality function of age, we need to find the turning point of age. We look at the first differential of $Y(A): .24 - .20 A = 0$ and the solution of this equation is: $A = (.24/20) = 1.20$.

Due to the fact that $A$ is a standardized variable and by applying the mean of the age variable (Mean = 44.04) and the standard deviation (SD = 10.09), we get that the maximum of averaged professional vitality at the following age equation: $1.20 \times (A - 44.04)/10.09$. Solving this equation indicates that the age at which averaged professional vitality is maximized is $A = 57.12$ years.

Regarding the curvature of averaged career satisfaction we can see from Table 5 that the regression function (with the controls of
### Table 3
Findings of regression analysis (standardized coefficients) of the relationship between the independent variables and position in organizational hierarchy, career satisfaction, life satisfaction and turnover intentions.

<table>
<thead>
<tr>
<th>Position in organizational hierarchy</th>
<th>Career satisfaction</th>
<th>Life satisfaction</th>
<th>Turnover intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>β(t)</td>
<td>β(t)</td>
<td>β(t)</td>
<td>β(t)</td>
</tr>
<tr>
<td>1. Age</td>
<td>.26(5.19)**</td>
<td>-.12(−2.63)**</td>
<td>-.05(−.97)</td>
</tr>
<tr>
<td>2. Gender</td>
<td>-.65(−1.41)</td>
<td>.02(47)</td>
<td>.07(1.64)</td>
</tr>
<tr>
<td>3. Marital status</td>
<td>-.04(−.76)</td>
<td>-.10(−2.40)</td>
<td>-.14(−3.08)**</td>
</tr>
<tr>
<td>4. Education</td>
<td>.06(1.30)</td>
<td>-.03(−.66)</td>
<td>.01(0.04)</td>
</tr>
<tr>
<td>5. Protean attitude to career</td>
<td>.19(3.98)**</td>
<td>.33(7.64)**</td>
<td>.13(2.88)**</td>
</tr>
<tr>
<td>6. Career commitment</td>
<td>.01(0.07)</td>
<td>.24(5.53)**</td>
<td>.35(7.89)**</td>
</tr>
<tr>
<td>R²</td>
<td>.11</td>
<td>.20</td>
<td>.16</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.10</td>
<td>.19</td>
<td>.15</td>
</tr>
<tr>
<td>F</td>
<td>8.97***</td>
<td>20.31***</td>
<td>14.97***</td>
</tr>
</tbody>
</table>

N = 498–545 (due to missing values).

### Table 4
Findings of hierarchical regression analysis (standardized coefficients) of the relationship between the independent variables, professional vitality and position in organizational hierarchy, career satisfaction, life satisfaction and turnover intentions.

<table>
<thead>
<tr>
<th>Position in organizational hierarchy</th>
<th>Career satisfaction</th>
<th>Life satisfaction</th>
<th>Turnover intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>β(t)</td>
<td>β(t)</td>
<td>β(t)</td>
<td>β(t)</td>
</tr>
<tr>
<td>1. Age</td>
<td>.16(3.34)**</td>
<td>.21(4.21)**</td>
<td>-.22(−4.71)**</td>
</tr>
<tr>
<td>2. Gender</td>
<td>-.09(−.20)***</td>
<td>-.08(−1.73)</td>
<td>-.02(−.43)</td>
</tr>
<tr>
<td>3. Marital status</td>
<td>-.04(−.89)</td>
<td>-.05(1.11)</td>
<td>-.08(−1.79)</td>
</tr>
<tr>
<td>4. Education</td>
<td>.06(1.27)</td>
<td>.05(1.27)</td>
<td>-.06(−1.70)</td>
</tr>
<tr>
<td>5. Protean att. to career</td>
<td>–</td>
<td>.13(2.77)**</td>
<td>–</td>
</tr>
<tr>
<td>6. Career commitment</td>
<td>–</td>
<td>-.08(−1.51)</td>
<td>–</td>
</tr>
<tr>
<td>7. Professional vitality</td>
<td>.22(4.79)*****</td>
<td>.21(3.97)**</td>
<td>.33(7.44)**</td>
</tr>
<tr>
<td>R²</td>
<td>.12</td>
<td>.14</td>
<td>.12</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.11</td>
<td>.13</td>
<td>.11</td>
</tr>
<tr>
<td>Δ R²</td>
<td>–</td>
<td>.02</td>
<td>–</td>
</tr>
<tr>
<td>F for Δ R²</td>
<td>–</td>
<td>4.78***</td>
<td>–</td>
</tr>
</tbody>
</table>

N = 498–545 (due to missing values).

### Table 5
Hierarchical regression analysis (standardized coefficients) of the relationship between professional vitality, career satisfaction and age.

<table>
<thead>
<tr>
<th>Professional vitality</th>
<th>Career satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>β(t)</td>
<td>β(t)</td>
</tr>
<tr>
<td>1. Gender</td>
<td>-.04(−.09)</td>
</tr>
<tr>
<td>2. Marital status</td>
<td>-.01(−.20)</td>
</tr>
<tr>
<td>3. Education</td>
<td>.12(2.69)**</td>
</tr>
<tr>
<td>4. Protean att. to career</td>
<td>–</td>
</tr>
<tr>
<td>5. Career commitment</td>
<td>–</td>
</tr>
<tr>
<td>6. Age</td>
<td>–</td>
</tr>
<tr>
<td>7. Age squared</td>
<td>–</td>
</tr>
<tr>
<td>R²</td>
<td>.02</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.01</td>
</tr>
<tr>
<td>F</td>
<td>2.44</td>
</tr>
<tr>
<td>Δ R²</td>
<td>–</td>
</tr>
<tr>
<td>F for Δ R²</td>
<td>–</td>
</tr>
</tbody>
</table>

N = 498–545 (due to missing values).

p < .05.

p < .01.

p < .001.

gender, marital status and education is significant (F = 17.52, p < .001). Based on results in Table 4 and by looking at the career satisfaction age sub functional (step 3), we get the equation X(?A) = −.13A + .04A². In order to find the curvature type, we apply the calculus rules:

Differentiating X(A) we get: X′(A) = −.13 + .08A; By differentiating once again we get X′′(A) = .08, which implies that there is a minimal point for the averaged career satisfaction functional and consequently it is a U shape function. Therefore hypothesis H4b is supported.
5. Discussion and conclusions

We developed and empirically examined a new model for a promising career development dimension – professional vitality (Grimland et al., 2011; Harvey, 2002). All of our hypotheses which comprised the model were fully or partially supported. Our investigation emphasizes the importance of employees’ inner resources as a main drive for professional vitality in organizations and that professional vitality is a highly supportive mechanism for career success.

5.1. Theoretical implications

Our contribution to the literature is threefold. First, we introduce COR theory to the study of careers, and manifest its relevance and worth for this area. Second, by incorporating professional vitality into the overarching career success framework we enrich the theoretical lenses for studying careers. Finally, and of both theoretical and practical relevance, we explored the vitality-age relationship which is highly relevant to the growing aging work force around the world.

By incorporating the COR conceptual framework (Hobfoll 2002; Wright & Bonett 2007) in career research, our findings highlight the central role of antecedents based on employees values and their effect on professional vitality at work. This framework supplements current knowledge with an additional theoretical platform to enrich the discussion of an aspect of employee work outcomes that is rarely discussed in the literature – professionally vitality. We also broaden the notion of employees’ well being and career conduct, adding specific dimension of the work domain to the more generally accepted dimensions. These variables – professional career attitude and career commitment) – demonstrated relationship with professional vitality. Professional vitality also demonstrated relationships with the different aspects of career success – for example, position in organizational hierarchy, career satisfaction, life satisfaction and turnover intentions.

In addition we found that professional vitality either fully or partially mediates relations between employees’ inner resources (ProtA and CC), implying the importance of professional vitality in organizational life. We also contribute to the debate about well being at the workplace and its relationship to age (Fischer, 2009). Our research about vitality, that can be seen as a “fuel” for organizational life (Fritz et al., 2011), indicates an Shaped curvature with maximum in the age of fifties. It opens also questions, like what phenomena affects the maximum age point, how it is related to social and national culture, or how the maxima can be pushed to more advanced age.

5.2. Organizational and managerial implications

Beyond its theoretical contribution to the study of career development and work behaviors, our study also has a number of meaningful practical implications, mainly due to potential relationships of vitality with creativity, innovation, job performance and work safety. Our study’s finding of the differential relations of professional vitality with various organizational aspects of career success, especially the positive relationship of professional vitality with career satisfaction and life satisfaction, emphasized aspects of modern careers, can contribute to possible better explanations of the mechanisms leading to career success. The negative relationship of professional vitality with turnover intentions indicates that the retention of the highly talented workers can be related to the vitality of the employees. All of this suggests that improving the professional vitality of their employees should be a priority for high-performance human resource practices. In addition, due to the centrality of the professional vitality phenomenon in organizational life, and its antecedents (based on the employees’ personal values), it is important to recruit and promote workers with relevant values to professional vitality. As the average worker is growing older and staying in the workforce for a longer period, the professional vitality element enables organizations to benefit from a long period of creativity, innovation and job performance from their employees.

5.3. Strengths and weaknesses

As with any new addition to the career literature, this research has limitations that need to be acknowledged and addressed in future studies. The research design is based on self-report and thus might be subject to common-method bias. As noted in the analysis section, it passed the Harman’s single factor test. Thus while this may be a limitation, we are confident that this potential bias has been minimized.

We explored a specific population – task/project managers in high tech and engineering/infrastructure fields – which may limit the external validity of our results, but this population is typical for the current managerial workforce. Lastly, the study was conducted in a single country – Israel. It should be mentioned that Israel may be considered as a ‘Maduradam’ (a microcosm) for studies representing wider Western society (Harel & Tzafir, 1999; Weber & Tarba, 2010), thus this limitation is likely not a major issue. We acknowledge that causality could not be tested under the current research design.

5.4. Future research

Investigating combinations of other antecedents (based on inner values or attitudes) may enhance the predictive power of the professional vitality model. Such factors may be boundaryless career attitudes or kaleidoscopic career motivators. Another venue can be integration of factors with organizational variables like perceived organizational support, perceived organizational politics or trust between the employees and their employers. Additionally, testing the model in different working settings and professions can expand the generalizability of our results. We also propose to replicate the study in different work cultures, Western ones and in the emerging markets of Asia and South America. Such studies can be conducted also beyond the high technology segments, such as in manufacturing, medical/health industry or heavy industry.

References

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