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# IT Self-Employment: A Protean Career View

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## ABSTRACT

IT self-employment is a growing trend. IS research however has mostly focused on careers of IT professionals in an organizational context. In this study, we use the Protean Career perspective to investigate reasons for the transition of IT professionals from organizational to self-employment in IT. Using eight waves of a longitudinal survey, we find that job satisfaction, growth need strength and IT human capital are positively associated with this career decision. We contribute to the literature on career mobility of IT professionals.

## CCS Concepts

• Social and professional topics~Computing occupations

## Keywords

IT self-employment; Protean Careers; Growth need strength

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## 1. INTRODUCTION

Research on motivation, experiences, collaboration, and knowledge work of IT professionals has primarily been in the context of an organizational setting (for a synopsis, see Wiesche, Joseph, Thatcher, Gu and Krcmar [1]). Little attention has been paid to self-employment. Neglect of IT self-employment in IS literature is of concern, given that no less than 32% of all technology jobs in the US are now freelance, and this figure is projected to rise to 45% by 2028 [2]. This neglect could be attributed to organizational employment being the dominant work form for decades. From a total rewards perspective [3], organizational employment has the potential to satisfy various individual needs.

Firstly, compared to self-employment, organizational employment provides several assured extrinsic outcomes, including steady income, benefits, and job security. Secondly, positive social outcomes, particularly important for IT professionals, are also readily accessible in an organizational setting [4]. These include advice from co-workers and access to

cross-functional competencies; among many benefits, these enable agile and pair programming critical for rapid and reliable software development. Shared responsibilities enable flexible work and better work-life balance, critical in light of high work demands. Finally, IT firms endeavor to provide opportunities to perform a wide variety of tasks with project-based work [5] as well as avenues for continuous learning and application to satisfy the IT professional's intrinsic needs for skill development and creativity [6]. Given these potential benefits and abundant jobs, organizational employment has been preferred. This, however, does not explain the growing shift towards self-employment.

Individual agency and the desire to control one's career path offers a potential explanation for this shift. The Protean Career framework [7] stresses this agentic career attitude characterized by greater self-direction and the goal of subjective career success [8]. Individuals with greater career mobility and a whole-life perspective instead of commitment to one organization are said to follow a Protean Career trajectory [9]. They are values-driven as they shape their career according to their own internal values and beliefs in contrast to, for example, organizational values and beliefs, and they are self-directed as they pursue their careers based on personally defined career goals [10]. Individual attributes such as psychological characteristics and human capital drive this agentic behavior [11]. Since IT professionals are characterized by higher growth needs [12], this perspective is germane to an investigation of their choice to transition from organizational to self-employment. Career transitions have been shown to be influenced by numerous job characteristics such as pay, meaningfulness of work and autonomy; job satisfaction reflects an individual's overall assessment of such characteristics, in the form of positive or negative feelings and attitudes toward their job.

Against this background, we use the Protean Career perspective to examine how an IT professional's overall job satisfaction, growth need strength and human capital influence their decision to transition from organizational to self-employment. Using longitudinal data from eight waves of the Understanding Society survey of British households, we find that individuals with higher job satisfaction, growth need strength and human capital are more likely to transition to IT self-employment.

We contribute to literature on IT career mobility that has thus far examined transition to non-IT business unit positions [13], secondary labor market work [14] and turnaway from the profession [15] among others. Self-employment being a major driver of economic growth [16], the findings provide insight into this important career choice.



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## 2. CONSTRUCTS

### 2.1 Self-employment

The Organization for Economic Co-operation and Development [17] defines the self-employed as those who own and work in their own business, including unincorporated businesses and own-account workers, and declare themselves as “self-employed” in population or labor force surveys [17]. Following this, we conceptualize IT self-employment as “those who work in their own IT business, including unincorporated IT businesses and own-account IT workers, and declare themselves as IT self-employed in population or labor force surveys”.

### 2.2 Protean careers and determinants of self-employment

The Protean Career framework is characterized by greater career mobility and a whole-life perspective instead of commitment to one organization [9]. The individual shapes their career according to their own needs, values, and objectives. Success is determined by individual motivation and learning new skills. This focus on personal agency emphasizes individual disposition including psychological attributes, and employability that depends largely on human capital as antecedents to a Protean Career orientation [18]. Human capital is defined as ‘refers to the knowledge, skills, and abilities acquired from training, development, education, and other types of work and nonwork learning-based experiences’ [19]. The focus on psychological attributes and human capital as being central to the decision to enter self-employment is also echoed in literature on self-employment and entrepreneurship across occupations [20, 21].

## 3. THEORY AND HYPOTHESES

### 3.1 Job satisfaction and IT self-employment

Job satisfaction refers to an individual’s overall positive or negative feelings and attitudes towards their job. It is defined as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” [22]. Extensive literature on job satisfaction finds numerous antecedents to job satisfaction including pay, autonomy, supervisor support and opportunities for growth among others [23]. While high job satisfaction is associated with favorable outcomes such as better job performance, increased motivation and organizational citizenship behavior [24, 25], low levels of job satisfaction have been shown to be associated with low productivity, burnout and turnover [26].

From a Protean Career perspective, individuals seek to maintain greater control over their career [7]. This could mean seeking opportunities to develop skills and knowledge that will allow them to self-direct their careers. Job satisfaction can be an important factor in achieving this self-direction because individuals who are satisfied in their current job will be more likely to feel motivated to take on challenges [27]. Higher job satisfaction can contribute to an individual’s self-efficacy [28], making them feel more confident in their skills and abilities. This is because such self-efficacy beliefs are constructed by mastery experiences related to successes and failures [29]. Echoing this, Wu and Griffin [30] find that job satisfaction has a positive effect on core self-evaluations, a meta-trait that captures a positive self-concept [31]. This contributes to the psychological resources required for individuals to take ownership of their careers and cope with uncertainty [32]. Using a survey of 200 participants, Koumoundourou, Kounenou and Siavara [33] found that positive core self-evaluations strengthen

vocational identity and career decision self-efficacy. Similarly, employing a survey of 3398 students, Rodrigues, Butler and Guest [11] found that positive core self-evaluations lead to greater Protean Career orientation. For these reasons, positive feedback from greater job satisfaction can be expected to increase individual’s desire for greater control and self-direction of their career. Self-employment provides an avenue in this direction as it has the potential to further increase autonomy and control over navigating one’s own career path [34]. On the other hand, individuals with lower levels of job satisfaction might experience negative core self-evaluations, and feel less confident in their knowledge and skills, leading to feelings of powerlessness [35, 36]; they might prefer turning over to another organization rather than the more challenging transition to self-employment. We therefore hypothesize,

**H1:** Job satisfaction is positively associated with transition to IT self-employment.

### 3.2 Growth need strength and IT self-employment

Individuals vary in their need to develop and grow professionally. Growth need strength is a measure of an individual’s desire to grow and develop [27]. Individuals with higher growth needs develop intentions and behaviors to seek out opportunities where they are challenged, ‘stretch themselves’ [37], and place higher importance on personal development and learning. This is especially important in a knowledge-based occupation like IT that is characterized by innovation and the need to stay current [12, 38]. Those periodically updating their skills and experimenting with the latest trends make themselves relevant to market demands. Individuals with high growth need strength, instead of waiting for opportunities, actively look for them to satisfy their innate needs for professional development [39]. They value the intrinsic rewards potentially attainable from excelling at challenging tasks [40]. IT self-employment presents one such potential avenue that could challenge the IT professional and satisfy their growth needs. Although an organizational setting might also present avenues for satisfying growth need strength, the additional onus of fulfilling organizational responsibilities might not be equally challenging. IT self-employment, however, will present more challenges and opportunities for growth. This is the major motivating factor in the Protean Career view. On the other hand, individuals with relatively less growth need strength may be content with the stability and security that their current job offers and may be less willing to take on the demands and risks associated with self-employment. Therefore,

**H2a:** Growth need strength is positively associated with transition to IT self-employment.

Growth need strength will further increase the individual’s desire for autonomy and control over their career in order to shape their own career trajectory such that it aligns with their personal values and goals for growth [34]. Individuals with greater growth need strength actively seek out opportunities to keep their knowledge and skills current [37, 41], which will increase their self-efficacy, leading to an increased desire to have greater control over their career. Echoing this, Lake, Highhouse and Shrift [42] found that the advancement motive displayed by individuals with high growth need strength was associated with greater career mobility. On the other hand, individuals with less growth need strength might be less likely to have a stronger desire for control over their career path and may be more comfortable in a traditional organizational setting. As

individuals with greater job satisfaction can be expected to have increased desire for greater control over their career trajectory, growth need strength can be expected to moderate the main relationship in H1. Therefore,

**H2b:** Growth need strength strengthens the positive association between job satisfaction and transition to IT self-employment.

### 3.3 Human capital and IT self-employment

Human capital theory posits that individuals have varying levels of knowledge and skills that have economic value [43]. Human capital has been shown to be positively associated with opportunity identification [44]. Among all the human capital constructs, education and work experience are the two most often prominently studied [45]. Because of the knowledge-intensive nature of IT, human capital can be expected to play an important role in the decision to transition to self-employment.

Individuals with more work experience for instance, can be expected to have greater knowledge of how organizations function and how they are managed [46]. They can apply this experience, knowledge, and problem-solving routines learnt over time to starting new ventures. These individuals develop environment scanning skills for relevant information and have mental schemas for how this information relates to clients, customers, and markets [47]. They have relatively developed capabilities in all three dimensions required to discover new opportunities in the technology context: prior knowledge of markets, ways to serve the market, and addressing customer problems [48]. Compared to individuals with less IT human capital, those with more human capital will therefore show more willingness to take on risks and pursue challenging opportunities, including IT self-employment. Therefore,

**H3a:** IT Human capital is positively associated with transition to IT self-employment.

Individuals with relatively less IT human capital can be expected to focus more on building up their IT knowledge, skills and experience. They might be relatively more accepting of organizational demands and make career choices based on labor market demands to grow their IT human capital, rather than demand greater personal control over their own career trajectory. On the other hand, individuals with higher levels of IT human capital will have relatively more options available to them in the IT industry [49]. They can afford to be more selective in their career choices when they contemplate career mobility. Compared to those with less IT human capital, such individuals will therefore have a greater desire for control over their career path. As individuals with greater job satisfaction can be expected to have increased desire for greater control over their career trajectory, IT human capital can be expected to moderate the main relationship in H1. Therefore,

**H3b:** IT Human capital strengthens the positive association between job satisfaction and transition to IT self-employment.

## 4. METHOD

### 4.1 Data Collection

We use data from the Understanding Society survey of British households [50]. The survey is funded by the UK Economic and Social Research Council (ESRC) and executed by ESRC UK Longitudinal Studies Center in collaboration with the Institute for Social and Economic Research at the University of Essex. The objective of the survey is to improve our understanding of social and economic changes in Britain. The survey employs face-to-face interviews of a stratified clustered random sample

of approximately 40,000 households representative of the British population. The same respondents are surveyed each year. Using eight waves of the data from 2009 to 2016, we identified individuals who worked in full-time organizational IT jobs and then transitioned to IT self-employment.

## 4.2 Measures

### 4.2.1 Dependent variable:

Self-employment in IT: Dummy variable coded 1 if the individual transitioned from an organizational IT job during the previous wave to self-employment in IT during the current wave. Coded 0 if the individual continued to be in full-time organizational employment between the two successive interview waves.

### 4.2.2 Independent variables:

Job satisfaction: Individuals were asked ‘How dissatisfied or satisfied are you with your present job overall?’. Measured on a scale of 1 to 7 where 1 indicates ‘Completely dissatisfied’ and 7 indicates ‘Completely satisfied’. The variable was lagged by one wave for analysis.

Growth need strength: Various measures exist for growth need strength. It has been characterized as learning goal orientation [51], need for achievement [52], and proactive personality [53]. We measured this variable using the response to the question: ‘Would you like to take up work-related training?’ that captures learning goal orientation. 1 indicates yes, while 0 indicates no. The variable was lagged by one wave for analysis.

IT Human capital: We proxy for IT human capital using the individual’s total IT work experience. We measure this as the total number of years of work experience in full-time IT jobs before taking up IT self-employment.

### 4.2.3 Control variables:

Gender: Gender was coded 0 for female and 1 for male.

Marital Status: Marital status was coded 0 for never married, divorced or separated, and 1 if married, living as a civil partner or living as a couple. Marital status of the past interview wave was used for analysis.

Age: Measured using natural logarithm of the respondent’s age at the time of interview.

Education: Education was coded as 2 if the individual has a higher degree, 1 for A-level, GCSE or other equivalent qualification and 0 in case of no formal educational qualification. The variable was lagged by one wave.

Risk propensity: Risk propensity was measured as part of a battery of psychological characteristics assessment. Measured on a scale ranging from 1 to 10, with 1 being low and 10 high.

Unemployment rate: We obtained annual unemployment data from the UK Office for National Statistics (ONS) (ONS 2020), and used the figure corresponding to the year of the previous interview wave.

Pay: The survey asked respondents for their gross pay per month. We used the natural logarithm of this figure for analysis. The variable was lagged to measure pay during the previous interview wave.

## 5. RESULTS

We used panel regression in Stata to estimate the effect of the independent variables on the probability of an individual

choosing to transition from organizational to self-employment in IT. We included year dummy variables to control for time fixed effects. The overall model was significant ( $p=0.031$ ). In the first model, we entered only the control variables. We did not find significant effects for gender, marital status, age or education. Individuals with higher risk propensity ( $\beta=0.016$ ;  $p=0.054$ ) and those with higher pay ( $\beta=0.018$ ;  $p=0.022$ ) were found to be significantly more likely to enter IT self-employment. Also, individuals were found to be significantly less likely to transition to IT self-employment during periods of higher unemployment ( $\beta=-0.012$ ;  $p=0.043$ ).

We added each independent variable successively in subsequent models to test for their direct effects. The overall model explained 18.03% of variance in the dependent variable. Job satisfaction was found to be positively associated with transition to IT self-employment ( $\beta=0.009$ ;  $p=0.012$ ), showing support for H1. Individuals with higher growth need strength (H2a) ( $\beta=0.012$ ;  $p=0.066$ ) and IT human capital (H3a) ( $\beta=0.065$ ;  $p=0.000$ ) were also found to be significantly more likely to transition to IT self-employment. IT human capital was also found to moderate the main relationship (H3b) ( $\beta=0.007$ ;  $p=0.066$ ). However, we did not find significant effects for moderation by growth need strength ( $\beta=0.001$ ;  $p=0.401$ ).

## 6. DISCUSSION

This study investigates job satisfaction, growth need strength and IT human capital as determinants of transition from organizational to self-employment in IT.

Literature shows that low job satisfaction might be a trigger for entry into self-employment [54, 55] while studies in IS have found job satisfaction to be a significant predictor of turnover [26, 56, 57]. In a survey of 4192 IT professionals in Singapore, Lee, Wong, Foo and Leung [54] find that an unfavorable innovation climate and lack of technical innovation incentives influence entrepreneurial intentions. Individuals with low job satisfaction and higher levels of human capital might therefore view self-employment as an attractive alternate employment option. However, we do not know if this holds across all occupations. Moreover, the Protean Career perspective provides an opposite view on how job outcomes may be interpreted differently based on the individual's motivation to have greater control over their career direction. Indeed, our study finds that self-employment is more likely for individuals with higher job satisfaction.

Individuals with higher growth need strength enjoy challenging work that stimulates their interest [58]. However, organizational employment might not always present the best setting for every employee to satisfy their growth needs. For instance, an ability mismatch might occur when the skills and abilities required in an IT job differ from those acquired in formal education, certifications, or through training programs. This poses a serious problem in a knowledge-intensive occupation such as information technology as an individual's competencies risk being downgraded or irrelevant over time. Such individuals might turnover and look for alternative opportunities in the labor market where their abilities are a better 'fit' or where they have opportunities for further learning. Self-employment presents a viable alternative in these cases because individuals can choose specific kinds of projects to work on and have greater agency in building their desired skillset.

Overall, we find that higher human capital in the form of IT work experience increases the likelihood of transition to IT self-employment. IT experience allows for the accumulation of a

wide range of occupation-specific managerial and technical skills. It also allows for widening an individual's professional network that can be a source of advice in moving to IT self-employment. It increases entrepreneurial alertness and enhances an individual's credibility which gives them an edge over others while competing to acquire projects on freelance marketplaces, as well as getting hired as contract workers for organizations. Individuals with higher IT tenure have more experience in technical and managerial aspects of project management, including handling client expectations which is valued by clients on IT project marketplaces as well as organizations looking to hire independent contractors.

Findings for pay and job satisfaction might be interpreted as strengthening the argument that IT professionals are driven to make career decisions based on non-pecuniary reasons. If this is the case, the motives behind IT self-employment can largely be seen as positive, intended to improve personal outcomes, and attain greater control over their career.

Finally, unemployment rate was found to be negatively associated with the decision to move to IT self-employment. In other words, individuals in full-time organizational IT employment are significantly more likely to enter IT self-employment during positive economic cycles. Periods of economic prosperity are associated with more opportunities that might serve to pull IT professionals into self-employment.

## 7. CONTRIBUTION

We advance the literature on careers of IT professionals by bringing into focus a neglected area of career transition, viz. IT self-employment. For the first time, we bring in longitudinal data to bear on IT self-employment, allowing analysis of actual behavior rather than intention [54]. From a careers perspective, the discretionary nature of transition to IT self-employment suggests that individuals are more likely to take control of and direct their career trajectories based on their needs, values and objectives even outside of organizational settings, and adds support to the Protean Careers argument [7].

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