



RESEARCH ARTICLE

The needs of freelancers and the characteristics of ‘gigs’: Creating beneficial relations between freelancers and their hiring organizations [version 1; referees: awaiting peer review]

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Abstract

More and more workers in Western economies are operating as freelancers in the so-called ‘gig economy’, moving from one project—or gig—to the next. A lively debate revolves around the question as to whether this new employment relationship is actually good for innovation in the 21st century economy. Proponents argue that in this gig process valuable knowledge is created and transferred from one organization to the next via freelancers through their sequence of temporary gigs or projects. Antagonists reason that freelancers are only hired as one-trick ponies on a transactional basis, where knowledge is neither created nor shared. In this study, we focus on the characteristics of gigs. Which project characteristics lead to increased engagement of freelancers, and hence to knowledge-sharing behavior? Our study suggests that the gig economy can indeed lead to increased knowledge sharing by and engagement of freelance workers, provided that organizations and freelancers structure and shape gigs in such a way that they: (1) not only suit the task requirements at hand and (2) fit with the acquired skills of the freelancer, but that these gigs also (3) leave ample of room for the freelancer’s individual growth and development of new skills. This suggests that innovative organizations will need to shape gigs in such a way that freelancers are not only hired for their expertise, but rather that gigs also provide a learning opportunity for freelancers.

Keywords

Gig economy, freelancers, project-based work, knowledge sharing, and engagement



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REVIEW

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Introduction

More and more workers in Western economies are operating as freelancers in the so-called ‘gig economy’, moving from one gig—or project—to the next. The status of such gig workers is under debate (Kuhn & Maleki, 2017), and the exact number of freelancers is difficult to estimate with the existing sources of government data. However, their numbers seem to be increasing exponentially. Recently, according to the independent research firm Berland (2014), an estimated 53 million Americans—more than one in three workers—were already freelancers in the early 2010s (see also Cappelli & Keller, 2013). With the rise of the gig economy, growing numbers of professionals no longer hold long-term connections to organizations. Rather, much employment is arranged through temporary contracts with the help of employment agencies such as Randstad and online staffing platforms such as Elance. More than ever before, organizations tend to hire temporary expertise on a project basis. This is not limited to generic and low-value skills, as was the case in the 20th century, but increasingly also extends to very specialized skills offered by valuable and scarce knowledge workers.

It is by no means clear yet, though, whether the expansion of these new forms of temporary labor is positive for individuals, organizations, and/or the economy as a whole. For instance, Friedman (2014) argues that “While the rise of this ‘gig’ economy is praised by some as a response to the wishes of a more entrepreneurial generation, it is more likely that it is driven by the concerns of businesses to lower wages and benefit costs.” The then Democratic presidential candidate Hillary Clinton recently added to this: “This on-demand or so called ‘gig’ economy is creating exciting opportunities and unleashing innovation, but it’s also raising hard questions about workplace protections and what a good job will look like in the future” (Rogers, 2015). Paul Osterman, professor at MIT Sloan Business School, argued that if the jobs “meet people’s needs for flexible employment and provide learning real skills and pay decent wages, then they are certainly a positive for the economy” (Rogers, 2015).

To get a better understanding of the gig economy, and particularly its true impact on individuals and organizations, we need to dig deeper by focusing on the micro level of the individual freelancer, and her/his attitude *vis-à-vis* the hiring organization (cf. Kuhn, 2016). To this aim, the current study is the first, to the best of our knowledge, which seeks to analyze ‘gigs’ in detail empirically, and by doing so, to examine the micro-level building blocks of the macro-level gig economy. Can a series of gigs constitute a good job? Do these gigs engage and develop individuals, or are individuals merely used and exploited by hiring organizations to bring in their expertise? This study focuses on three aspects relating to these questions: (1) freelancers’ individual growth opportunities provided by gigs; (2) engagement of freelancers with projects and organizations; and (3) knowledge sharing of freelancers with their hiring organizations. With our focus on this set of three aspects, we examine what we believe may well be the essential freelancer—organization relationship’s core that may turn out to be mutually beneficial beyond the isolated transaction of a single gig.

Given that we are entering into new territory here, we opted for an exploratory research design. Specifically, we decided to conduct a survey study in a Dutch convenience sample, with 928 usable responses. After reviewing related literature, we adapted validated scales to fit with our specific gig context. Additionally, we developed new scales where we could not find appropriate ones in the extant literature. Our study suggests that the gig economy can indeed lead to increased knowledge sharing by and engagement of freelance workers, provided that organizations and freelancers structure and shape gigs in such a way that they: (1) not only suit the task requirements at hand and (2) fit with the acquired skills of the freelancer, but that these gigs also (3) leave ample of room for the freelancer’s individual growth and development of new skills. Under these three specific conditions, freelancers learn from gigs and are engaged with the contractors, and share their valuable knowledge with these temporary hiring organizations. Then, we have a win-win that benefits both individuals and organizations.

Literature

Despite the fast and unprecedented growth of the gig economy, and hence of the freelancer community, and the associated increased relevance of project-based work, research into project-based organizations and their temporary workers is still scarce. Research on the self-employed is plentiful (for recent examples, see, e.g., Lechmann & Schnabel, 2014; Spanjer & van Witteloostuijn, 2017; van Praag *et al.*, 2013), but many of our organizational theories are still based on the notion that work is permanent and not temporary, rather than on the insight that this work is rapidly changing and organized in the form of temporary contracts in the context of projects. Two notable exceptions are the studies of Lundin & Söderholm (1995) and Whitley (2006), who both have developed insightful theories on project-based organizations.

This is not to say that no research has been conducted on project-based work—quite the contrary. For example, topics such as learning and innovation within project-based organizations have become notable subjects of research. Insightful studies on project learning and innovation are, for example, Prencipe & Tell (2001) and Brady & Davies (2004) on learning processes in project-based organizations, or Keegan & Turner (2002) on the linkage between innovation and project management practices. However, these studies often focus on the organization rather than the freelancer (i.e., organizational learning or organizational capability development), and are set in organizations where full-time employees are executing the work. In the current study, we are instead interested in projects executed by a temporary, professional workforce that moves from one gig to another, with a focus on the freelancer’s perspective.

Freelance careers: the art of stylishly building portfolios

Although freelancing has gradually increased in importance over the last two decades, there is still limited empirical work on freelance careers. Interesting exceptions are van den Born & van Witteloostuijn (2013), Fraser & Gold (2001) and Platman (2003). In these studies, the freelance career is often seen as the archetypical portfolio career. Frameworks such as DeFillippi & Arthur’s (1994) model of the boundaryless career or

Hall's (2004) concept of the protean career are frequently used as the lens through which to describe and examine the challenges and paths of the freelance career. Interestingly, many studies of the freelance career are set in the creative industries. This is understandable, as most creative vocations, from actors to designers and from musicians to translators, earn their living by moving from gig to gig. Careers in the creative industries are centered around portfolios of gigs. The gig is both the vehicle for creative output, as well as the channel that gives shape to the freelance career. Examples of relevant work in these industries are Faulkner (2003) on the careers of composers in the feature film industry and Haunschild (2003) in repertory theatres, and Weissman (2011) and Armstrong (2013) on musical careers. We refer to DeFillippi (2015) for an overview of the work on careers in creative and cultural industries.

One of the key career challenges of every freelancer, regardless of industry, is how to cope with the tendency to type-cast (e.g., Zuckerman *et al.*, 2003). This is the tendency of hiring organizations to prefer professionals with similar prior experience and an unambiguous career path (Jones, 2002). O'Mahony & Bechky (2006) argue that freelancers face a career progression paradox. While learning is central to their livelihood as knowledge workers, hiring organizations do prefer one-trick ponies with extensive experience in one key area. Freelancers reconcile this career progression paradox by pursuing "stretchwork". O'Mahony & Bechky (2006, p. 924) define stretchwork as: "work that largely fits with an individual's previous work experience but introduces a small novel element that extends his or her skills in a new direction." Stretchwork facilitates freelancers to obtain new knowledge, skills and abilities, which later on can be marketed as relevant experience, so extending the portfolio of what they have on offer.

This implies that freelancers require projects with some degree of novelty, whilst hiring organizations do largely prefer those individuals who demonstrated extensive experience and commitment in a certain field of (rather narrow) specialization. The hiring organizations expect freelancers with a high degree of specialization to do a better job. This tendency to hire specialist experts only may not motivate freelancers to do their utmost best for the hiring organization, notwithstanding the fact that learning and overcoming challenges are crucial to both their happiness (Csikszentmihalyi & Csikszentmihalyi, 1991) as well as their careers (Leung, 2014). Freelancers may retaliate by 'not going the extra mile', but by only delivering what is agreed upon – and not by providing anything else or something extra. In terms of psychological contracts (Rousseau, 1990), one may argue that the hiring organization signals a purely transactional contract by offering no developmental possibilities, and by only looking for the perfect project-person fit. The freelancer accepts this transactional proposal by offering just the required services, and nothing more. While this 'contract' may be suitable for many gigs, one may argue that this will hamper the essence of why freelancers are brought in: transferring their external expert knowledge to the organization and bringing the organization to the next level.

Mutual beneficial relations: buyer–supplier relations versus employee relations

In this study, we do not examine the career path of freelancers, but we rather focus on features of the gigs: i.e., (temporary) projects performed for hiring organizations by an external workforce. Under which conditions do these gigs lead to innovation for the organization, and growth and development for the freelancer? That is, when are these gigs beneficial for both worker (i.e., freelancer) and (hiring) organization? As is almost always the case with studies on freelancers, much inspiration can be found in two sources: the literature on employees and the literature on entrepreneurs, as the freelancer is a hybrid with both employee and entrepreneurial features (see van den Born & van Witteloostuijn, 2013). In this instance, we can build on the literature on employment relations, on the one hand, and that on buyer-supplier relations, on the other hand. Together, both strands of literature can provide a good starting point for this study.

Interestingly, both the literature on buyer–supplier relationships and that on employee relations distinguish between 'close' versus 'distant' (or 'arms-length') types of relations. For instance, Wuyts & Geyskens (2005) study the formation of buyer–supplier relations and the conditions under which close relationships are formed, as well as when detailed contracts are drawn. This is not so different from human resource management models such as those of Tsui *et al.* (1997) or Lepak & Snell (1999), distinguishing between internal developing and external contracting, or the psychological contract literature that differentiates between relational and transactional relationships.

In a meta-analytical review of the literature on buyer–supplier relationships, Terpend *et al.* (2008) conclude that buyer–supplier relations have deepened over the past two decades: buyers have come to expect more of their suppliers. This suggests that there is merit in close buyer–supplier relationships. This is also clear from various empirical follow-up studies on the matter. For example, Revilla & Villena (2012) reveal that buyers that integrate knowledge with suppliers show improved efficiency as well as innovation. But in a study on the dark side of buyer–supplier relationships, Villena *et al.* (2011) report that not only insufficient social capital hurts the buyer–supplier performance, but that too much social capital is also detrimental. In a recent overview of the literature, Wang *et al.* (2013) confirm this view. Nurturing buyer–supplier relationships can culminate in significant performance improvement, yet these relationships may also lead to damaging results as a consequence of partner opportunism. They argue that firms should improve their use of social capital to curb the harmful effects of opportunism.

The literature on employee relations and the impact of such relations on outcomes dwarfs the literature on buyer–supplier relationships. For the sake of parsimony, we restrict ourselves to the psychological contract work that we believe is particularly relevant in our context. In this literature, the distinction between transactional and relational contracts is well established, and

many performance outcomes of such relationships have been studied. While most of the studies are aimed at investigating the effects of contract breach, many studies have also reported on the impact of the relational *vis-à-vis* transactional aspects of contracts. Meta-analytical studies of the empirical literature on psychological contracts (e.g., [Agarwal, 2014](#); [Zhao et al., 2007](#)) show that relational contracts typically correlate positively with commitment, trust and job satisfaction, whereas transactional contracts tend to be associated with lower commitment, trust and satisfaction.

Related to the above, many studies examine the psychological contract of temporary workers. These workers typically are not freelancers as they do not work for themselves, and generally do not have the high-value skills that many freelancers can bring to the table. Nevertheless, both types of temporary workers share many of the same characteristics, such as a temporary contract and having relations with various employers at the same time, and sequentially. One of the earlier studies on psychological contracts and contingent workers is that of [Pearce \(1993\)](#), who found that commitment was not different between full-time and contracted engineers, counter to her hypothesis. In this argument, transactional contracts are equated with temporary (often part-time) work, and relational contracts with a permanent (often full-time) job. While this seems plausible, many studies have shown that this simplification is besides the mark (e.g., [Guest, 2004](#)). Temporary work arrangements often have relational characteristics, and permanent employees may feel that they have a fully transactional relationship with their employer. Moreover, relationships of temporary workers often start off transactional, but over time become significantly more relational ([Lee & Faller, 2005](#)). It is therefore no surprise that research, by and large, does not find differences between temporaries and permanents on aspects such as satisfaction, commitment, and self-rated performance.

Knowledge sharing

That knowledge of outsiders is important for organizational innovation and knowledge development is by now well established. Especially the work of [Chesbrough \(2006\)](#), and subsequent studies on open innovation (e.g., [Dahlander & Gann, 2010](#)) and external knowledge (e.g., [Lichtenthaler & Lichtenthaler, 2009](#); [Zhou & Li, 2012](#)) have clearly demonstrated the value added of bringing in external knowledge into the organization's innovation process. However, most of these papers have studied this value added in terms of consumer or supplier knowledge; and none of these studies have included freelancers in their design as a potential source of external knowledge.

Equally, that knowledge sharing cannot be taken for granted is firmly established by now. For example, [Parke et al. \(2014\)](#) reveal that face-to-face meetings are important for effective knowledge sharing, even in virtual teams. The literature shows that motivation, ability, and opportunity all play an important role in knowledge sharing (e.g., [Reinholt et al., 2011](#); [Siemens et al., 2008](#)). Interestingly, much research demonstrates the crucial role of reciprocity ([Chiu et al., 2006](#); [Lin, 2007](#)). Reciprocal benefits are positively and significantly associated with

knowledge-sharing behavior in a variety of contexts (e.g., in communities of practice, as well as in organizations). This all suggests that hiring organizations that invest in the relation with their freelancers will benefit from increased influx of knowledge sharing from their freelancers.

Work engagement

Practitioners often recognize that engagement and “going the extra mile” are important for work performance. Since [Kahn \(1990\)](#) described engagement as a unique and important motivational concept, the popular press and many HR consultants have declared that engaged employees will create a competitive advantage for their organizations. Lately, these strong claims have been backed up empirically by a number of studies. One of the first of these studies is [Saks \(2006\)](#), revealing that engagement is strongly related to concepts such as satisfaction, intention to quit, and commitment, arguing that more academic research should look into the concept of engagement. Since then, a series of studies have confirmed these positive effects of engagement. For instance, [Rich et al. \(2010\)](#) show convincingly that engagement is a much stronger predictor of task performance than other, more traditional measures such as motivation, satisfaction, and involvement. In a meta-analytical study on the antecedents and consequences of engagement, [Christian et al. \(2011\)](#) conclude that engagement has a strong relation with both task as well as contextual performance.

Engagement is an active expression of employee wellbeing, which combines pleasure with dedication and activation. This suggests that engagement has a stronger relation with innovation than traditional subjective performance measures of wellbeing, such as job satisfaction. In this respect, [Bakker \(2011\)](#) argues that engaged workers are more open to new information, are more productive, and are more willing to go the extra mile, and [Salanova & Schaufeli \(2008\)](#) show the importance of engagement for proactive behavior of employees, a well-known determinant of innovativeness of firms. To date, the impact of engagement on innovation has scarcely been studied, however, with a few recent exceptions. For example, [Bhatnagar's \(2012\)](#) study reveals strong empirical relationships among work engagement, innovation, and turnover intention. The study of [De Spiegelare et al. \(2014\)](#) uncovers the strong relation between work engagement and innovative work behavior. This all suggests that if freelancers are hired to bring ‘newness’ and innovation to companies, the hiring organizations need to invest in creating engaged freelancers.

Predictions

Much has been written about employee engagement in the human resource management and organizational behavior literatures. In the context of our exploratory study into gigs from a freelancer perspective, we cannot but engage in cherry-picking, focusing on a few insights from this huge literature that we believe are highly relevant in a freelance setting, too. Engagement is commonly found to be positively related to job satisfaction, organizational commitment, lower intentions to quit, and organizational citizenship behaviors ([Saks, 2006](#)). It is therefore a desirable trait in employees that organizations strive for, and

several studies have offered suggestions as to how engagement can be achieved. For instance, Hicks *et al.* (2014) find that employees experiencing a “good fit” with their work environment become more engaged. This applies to both task engagement, which is the engagement toward the tasks that the employee executes, as well as organizational engagement, which refers to the investment of the organization in its workers. If there is a misfit between the employee and the environment, disengagement occurs. If a professional is not challenged enough by the environment, bore-out occurs; in the reverse case of too much challenge (and hence stress), the likelihood of burn-out increases.

Although the literature refers to employees, we believe that the above logic does also squarely apply to the independent professional. In the case of a freelancer, the task relates to the project s/he is hired for to execute. So, in analogy to the task engagement concept, we introduce project engagement, tailored to the role of the freelancer. Similarly, organizational engagement refers to the hiring organization. This gives the following pair of benchmark Hypotheses 1 and 2.

Hypothesis 1 (H1): *Freelancer–project fit is positively associated with project engagement.*

Hypothesis 2 (H2): *Freelancer–project fit is positively associated with organizational engagement.*

This pair of hypotheses can be argued to be tautological. After all, measures of a ‘fit’ will have a positive association with the outcome variable – engagement, in our case – by the very definition of the ‘fit’ concept. So, of course, Hypotheses 1 and 2 are empty without a detailed specification of what fit entails in our specific context. Hence, we detail what we mean by fit in our setting of freelancers in a series of four propositions. In these propositions, we focus on one attribute of the freelancer, and one characteristic of the gig: professional motivation and project environment, respectively. We argue that highly motivated professionals prefer high-opportunity projects (and, *mutatis mutandis*, that lowly motivated professionals have a preference for low-opportunity projects).

Proposition 1 (P1): *If the independent professional is highly motivated, then a high-opportunity project will result in a fit.*

Proposition 2 (P2): *If the independent professional is highly motivated, then a low-opportunity project will result in a misfit.*

Proposition 3 (P3): *If the independent professional is little motivated, then a low-opportunity project will result in a fit.*

Proposition 4 (P4): *If the independent professional is little motivated, then a high-opportunity project will result in a misfit.*

When employees believe that their organization cares about their wellbeing, then they are likely to respond by attempting to fulfill their obligations to the organization by becoming more engaged (Saks, 2006). Related to this, organizational support will be positively related to job engagement and organizational

engagement (Saks, 2006). Such (perceived) organizational support signals to the employees to care about the interests of the organization, and to help to achieve the organization’s goals (Rhoades *et al.*, 2001). *Mutatis mutandis*, this applies to the context of freelancers, too, with the difference that a freelancer is concerned with (perceived) project-related organizational support – not overseeing the whole organization, but being in close contact with the hiring organization’s supervisor of the project at hand. We coin this supervisor support. This gives our next pair of Hypotheses 3 and 4.

Hypothesis 3 (H3): *A caring organizational environment is positively associated with organizational engagement.*

Hypothesis 4 (H4): *Supervisor support is positively associated with organizational engagement.*

The relation between task-related (or project-related, in our setting) engagement and organizational engagement has not been studied before. Given the temporary nature of freelance work within an organization, we argue that professionals will not feel engagement toward a hiring organization *ex ante*. However, *ex post*, next to fit and the organizational environment, the professional may derive organizational engagement from the project engagement s/he feels. Professionals who sell their knowledge are often part of larger investment projects within the hiring organization, implying that their engagement with the project may well result in successes for the organization as a whole, beyond the project at hand. This suggests Hypothesis 5.

Hypothesis 5 (H5): *Project engagement is positively associated with organizational engagement.*

Next to having positive relations with such concepts as job satisfaction and the intention to stay, engagement has been found to be positively associated with knowledge sharing: Work engagement is an important predictor of knowledge-sharing behavior. It is believed that without engaging in tasks, employees are unlikely to share task-related knowledge proactively (Chen *et al.*, 2011). This is because a lack of engagement with the task has been found to limit proactive behaviors, amongst which knowledge sharing is a key one. As explained above, we argue that where work engagement applies to employees, project engagement will be a valid concept in the context of independent professionals. This provides Hypothesis 6.

Hypothesis 6 (H6): *Project engagement is positively associated with knowledge sharing.*

Organizational engagement has not directly been linked to knowledge sharing, to date, but has been shown to be related to a component of organizational citizenship behavior in the form of the willingness to take the time to help others who have work-related problems (Saks, 2006). Logically, sharing knowledge would be part of such an activity (Ford, 2008). From this, we have Hypothesis 7.

Hypothesis 7 (H7): *Organizational engagement is positively associated with knowledge sharing.*

Finally, *Cabrera et al. (2006)* find that a person will be more inclined to exchange knowledge with others to the extent that approval from supervisors is expected. We predict that this will also be the case for independent professionals, who have a tight connection to their supervisors in the hiring organizations to execute projects correctly and properly. This gives our final Hypothesis 8.

Hypothesis 8 (H8): *Supervisor support is positively associated with knowledge sharing.*

Figure 1 visualizes the full conceptual model, with references to our four propositions and eight hypotheses. Note that we refer to propositions regarding professional motivation and project environment, instead of hypotheses, as a comparison of the scores for this pair of variables will feed into the fit measure, as explained below.

Methods

Data

The research was executed in the Netherlands, a country that has seen a recent surge in independent professionals, especially those who have received higher education. The data was collected through online surveys. Potential respondents were approached

via email, through the network of an online freelancer community (i.e., Dutch Network Group) and a company that mediates between independent professionals and hiring organizations (i.e., HeadFirst). The freelancer network published the link of the survey and communicated the research widely within their community. This triggered 531 fully completed responses. The intermediary organization targeted 11,730 independent professionals, which generated 397 useable responses. The useable response rate is about 4%, which is quite good for online surveys. In total, we have 928 responses appropriate for data analysis.

Of course, the above implies that ours is a convenience sample, associated with many well-known downsides. Specifically, we have no way of knowing whether our sample is representative for the wider population of Dutch freelancers, and to what extent our sample is plagued by endogeneity as a result of selection (i.e., response) bias. Moreover, to increase the likelihood of response, we deliberately developed a very short survey instrument (see below), with 38 questions only (12 involving multiple-item scales). As our study is exploratory in nature, being the first of its kind, to the best of our knowledge, we believe that both choices are defensible. Of course, this implies that all our findings must be interpreted with caution, and that much replication work (with expanded surveys and other samples, also from

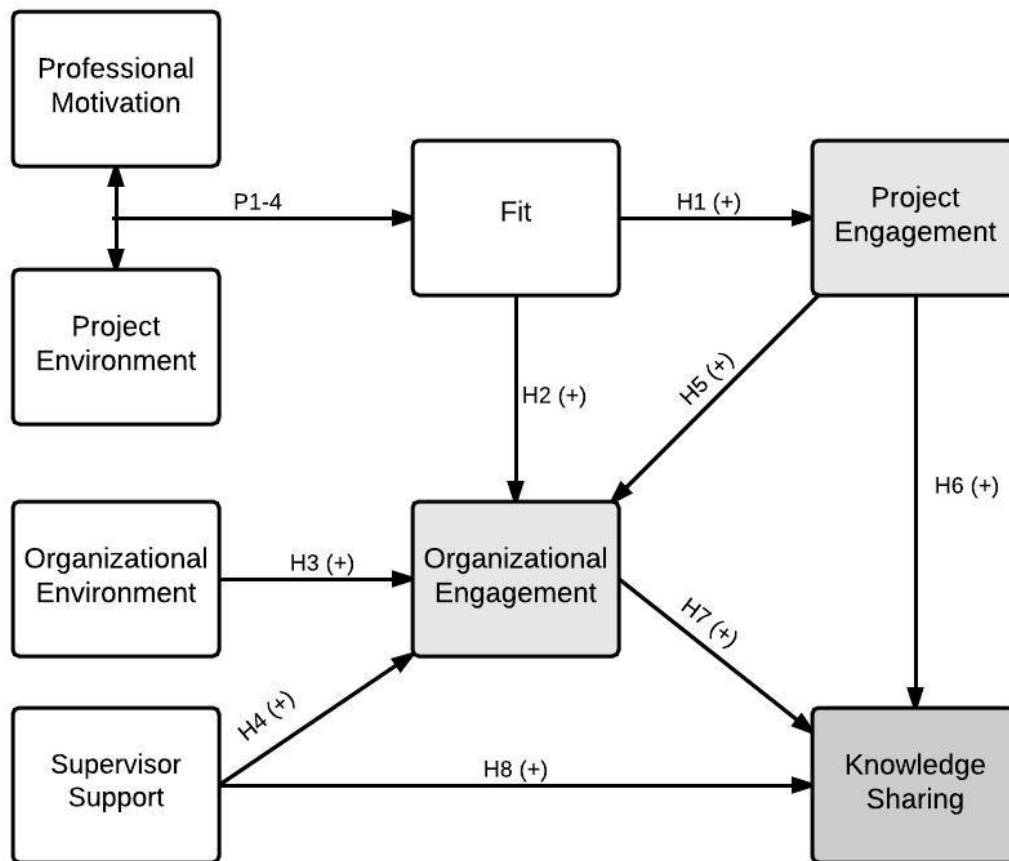


Figure 1. Conceptual model.

other countries) is needed to further examine the internal and external validity of our results, as well as to extend what we do here.

Measures

We developed an online survey with 38 questions, including all measures for all variables needed to examine Figure 1's conceptual model. A few elements that were included in the questionnaire—e.g., the scale for the Big Five personality traits—turned out to be of psychometrically very low quality (results available upon request). Hence, these were not added to our empirical model. Below, we only introduce the variables that could be used for empirical analysis. The full data are accessible through Barlage (2019), and the full survey (originally in Dutch) is in the Extended data (Arjan, 2019), translated in English and organized per variable (see below). To the extent available, we adopted and adapted validated scales from the literature – e.g., regarding engagement and knowledge sharing of professionals. Additionally, we constructed several tailor-made items and scales, which were pilot-tested with knowledgeable freelancers. This is a contribution of our study in and of itself.

Professional motivation. We measure a freelancer's professional motivation by means of a scale with eight items, tailored at a freelancer's project work, which was used earlier in van den Born (2009) and van den Born & van Witteloostuijn (2013). Respondents had to indicate on a five-point Likert-type scale to what extent they look for various aspects in their projects. Examples of items are "I am an independent professional because I have more flexibility to schedule my work" and "I am an independent professional because I can make more money". An exploratory factor analysis produced a single factor with an Eigenvalue larger than one and explained variance of 55.72%, which includes the following three types of professional motivation: (1) autonomy and professionalism; (2) variety and personal development; and (3) work-life balance and flexibility. The factor with three items is associated with acceptable (just) reliability, with a Cronbach's alpha of 0.60.

Project environment. To measure the key characteristics of the project (i.e., gig), we developed a new scale of twelve items based on interviews with several freelancers. Respondents had to indicate on a five-point Likert-type scale to what extent their current gig had a pre-specified list of characteristics. These project characteristics had to do with clarity of deliverables, income security, monetary rewards, visibility, fit with resumé, fit with current competences, possibility to increase network, level of autonomy, level of flexibility, and distance from home, all reflecting key attributes of the project environment. These were all important aspects related to the project as revealed by various freelancers in a series of pilot interviews. An exploratory factor analysis generated a single factor with an Eigenvalue larger than one and explained variance of 54.17%, including the following five key attributes of a project: (1) the project offers challenging work; (2) the project offers opportunities for getting a similar project in the future; (3) the project strengthens my visibility and reputation in the market; (4) the project is a clear asset to my resumé / portfolio; and (5) the project strengthens my network.

With a Cronbach's alpha of 0.77, the five-item scale's reliability is good.

Organizational environment. Comparable to the measurement of the project attributes, we also aimed to measure sponsor attributes – or organizational environment. To capture the key characteristics of the sponsor (i.e., hiring organization), we developed a new scale of twelve items, again based on pilot interviews with several freelancers. Respondents had to indicate on a five-point Likert-type scale to what extent their current project was associated with a pre-specified set of characteristics, all relating to the hiring organization's environment. These characteristics involved monetary rewards, fairness, reliability, security, procurement processes, growth opportunities, education, image, social climate, and work-life balance. An exploratory factor analysis gave a single factor with an Eigenvalue larger than one and explained variance of 52.17%, capturing the following four attributes of the hiring organization: (1) the organization has an attractive image; (2) the organization offers a pleasant work environment and engaging colleagues; (3) the organization takes my private circumstances into account; and (4) the organization does not differentiate between employees with temporal or permanent employment status. The reliability of this four-item scale is acceptable, with a Cronbach's alpha of 0.69.

Supervisor support. We follow the same procedure as Eisenberger *et al.* (2002) to measure perceived supervisor support by adapting the eight-item Perceived Organizational Support (POS) scale (Shore & Tetrick, 1991) to relate this to a freelance setting. Example items are "My supervisor appreciates my contribution to the goals", "My supervisor genuinely cares about my wellbeing" and "My supervisor is proud about my performance". A confirmatory factor analysis reproduces the measure, with a single factor with an Eigenvalue larger than one and explained variance of 51.90%. The reliability of this eight-item scale is very good, with a Cronbach's alpha of 0.86.

Project engagement. We use the five-item scale of Saks (2006) to measure project engagement, with "job" referring to the freelancer project (rather than employee task) context. Again, respondents had to indicate their assessments on a five-point Likert-type scale. In a confirmatory factor analysis, the five items of this scale load onto two factors, while there should only be one, according to Saks (2006). We decided to remove two items, implying that a one-dimensional project engagement three-item scale remained with an acceptable Cronbach's alpha of 0.68, an Eigenvalue larger than one, and explained variance of 60.93%. The three retained items are "I really throw myself into the job", "Sometimes I am so into my job that I lose track of time" and "This job is all consuming; I am totally into it".

Organizational engagement. To measure organizational engagement, we also used the scale from Saks (2006), with six items and a five-point Likert-type scale. In a confirmatory factor analysis, all six items load onto a single factor with an Eigenvalue larger than one. Example items are "Being a member of this organization is very captivating", "I am not really interested in the course of events in this organization" (reverse-coded),

and “I am highly engaged with this organization”. The reliability of this six-item scale is good, with a Cronbach’s alpha of 0.82. The explained variance is 55.13%.

Knowledge sharing. Finally, we adjusted the scale from Bock *et al.* (2005) to measure knowledge sharing in the freelancer project context, with four five-point Likert-type items. A confirmatory factor analysis confirmed this scale, generating a single factor with an Eigenvalue larger than one and explained variance of 70.95%. Example items are “I share all implicit knowledge with my client, free of additional charges” and “Sharing knowledge is good for me and my client”. The reliability of this four-item scale is very good, with a Cronbach’s alpha of 0.86.

Fit. The fit measure is constructed on the basis of items related to the variables *Professional motivation* and *Project environment*. We constructed a dummy measure referred to as *Fit*, where a fit is given a 1 and a misfit a 0. To do so, we first categorized the *Professional motivation* score into high and low motivation, and the *Project environment* measure into high and low opportunity. Average scores above 3 for both variables are considered to be high, and 3 or below to be low. We chose 3 as the threshold to distinguish high from low because of the nature of the associated five-point Likert-type scales. With average scores above 3, respondents agreed (considerably or fully) that their professional motivation or the project environment features a certain characteristic, while with average scores of 3 or below they are neutral or disagreeing. Furthermore, the attributes of the scales of *Professional motivation* and *Project environment* consist of multiple items each, decreasing the probability of having scores of exactly 3. Only 6% of all respondents had an average of 3 on *Professional motivation*, and just 3% of all respondents rated an average of 3 for *Project environment*. Hence, most observations fall easily above or below the threshold of 3.

In Table 1, we list all measures used in subsequent analyses, providing Cronbach’s alpha and explained variance per scale. In the *Extended data* (Barlage, 2019), all the retained items are included (i.e., all with factor loadings larger than 0.46, after reversing negative items), translated from Dutch into English. In all analyses below, we take the average score across all remaining items per scale as our dependent or independent variables, with the exception of *Fit*, which is a 0-1 dummy.

Analysis

We apply path analysis in the form of a series of Ordinary Least Squares (OLS) regressions, using Stata 13. A path analysis is like a structural equation model, but without the latent variables. Several equations are estimated simultaneously, creating measures of model fit or explained variance for the full model. Stata 13 reports direct and indirect effects, as well as total effects and their standard errors. We estimate the standard errors using the Huber-White sandwich estimators. Such robust standard errors are appropriate when the data are associated with minor concerns about failure to meet the standard OLS assumptions, such as non-normality, heteroscedasticity, and few observations exhibiting large residuals, leverage or influence.

A final methodological remark relates to our single-respondent design. Because all data are self-reported and all data are collected through the same questionnaire during the same period of time with a cross-sectional research design, common-method variance (CMV) may cause systematic measurement error, further biasing the estimates of the actual relationship among our theoretical constructs. CMV involves variance that is attributed to the measurement method rather than the constructs of interest. Method variance can either inflate or deflate observed relationships between constructs, thus leading to both Type I and Type II errors (Podsakoff *et al.*, 2003). We took precautionary measures to prevent CMV, such as guaranteed anonymity for respondents (Chang *et al.*, 2010). Moreover, it is very unlikely that respondents’ implicit theories include the complex effects of fit as predicted by Hypotheses 1 and 2 (Siemsen *et al.*, 2010). Still, after data collection, Harman’s one-factor test was conducted on all questionnaire items to test the potential presence of a common-method effect (Podsakoff *et al.*, 2003). The result from the factor analysis is that at the most 20.24% of the variance can be attributed to one factor. Hence, none of the factors is responsible for the majority of the variance. From this, we can conclude that the data are unlikely to suffer from a common-method bias.

Evidence

The mean age of the sample is 50.82, 76% is male, and 99% is highly educated (50% holding a university degree).

The descriptive statistics in Table 2 reveal that most professionals’ motivations are in line with the project environment: most of the time, they are highly motivated and find themselves in a challenging project environment. For 18% of the professionals, there is a misfit: about half of the time, the professional is highly motivated but not challenged by the project environment (bore-out); and in the other half of the observations, the misfit is reversed (burn-out). Overall, freelancers rate their projects, supervisors and organizations with an above-neutral score. Especially, they perceive that they share much knowledge with the hiring organization (a score of 4.17 out of 5), and that their supervisor is very supportive and understanding. Surprisingly, professionals do not feel highly engaged with their projects, but

Table 1. Factor analysis results.

Variable	Cronbach’s alpha	% explained variance
Professional Motivation	0.60	55.72
Project Environment	0.77	54.17
Organizational Environment	0.69	52.17
Supervisor Support	0.86	51.90
Project Engagement	0.68	60.93
Organizational Engagement	0.82	55.13
Knowledge Sharing	0.86	70.95

Table 2. Descriptive statistics.

Variable	Mean	Std. Dev.	1.	2.	3.	4.	5.
1. Fit (= 1)	0.82	0.39					
2. Organizational Environment	3.51	0.69	0.06				
3. Supervisor Support	3.80	0.61	0.03	0.44			
4. Organizational Engagement	3.64	0.63	0.10	0.36	0.31		
5. Project Engagement	3.30	0.70	0.09	-0.04	0.00	0.16	
6. Knowledge Sharing	4.17	0.57	0.01	0.11	0.23	0.29	0.17

rather are more engaged with the hiring organization than with the project. The bivariate correlations between *Organizational environment*, *Supervisor support* and *Organizational engagement* are moderate (0.31) to fairly high (0.44), and the variance inflation factor (VIF) of 1.24 is well below any worrisome threshold values.

The result of the regression estimation can be found in [Table 3](#). Estimations were realized with control variables (age, gender, and education level), but we found the model to be robust, and addition of control variables did not improve the model fit. Hence, we decided to exclude control variables from the model.

The number of observations and the R^2 noted at the bottom of the table are for the full model, as the path analysis estimates all equations simultaneously. We find that all our hypotheses are supported. *Fit* is positively associated with both *Project engagement* (H1), and the coefficient is marginally significant for *Organizational engagement* (H2), although the effects are greater for the *Project engagement*. *Organizational engagement* is also positively associated with *Organizational environment* (H3), *Supervisor support* (H4) and *Project engagement* (H5). *Organizational environment* has the greatest impact on *Organizational engagement*. *Organizational engagement* has the strongest (and a statistically significant) association with *Knowledge sharing* (H6), but there is also a positive significant relation with *Project engagement* (H7) and *Supervisor support* (H8).

A path analysis provides information about the total effects (i.e., the effect of an independent variable on a dependent variable whilst accounting for simultaneity in the system) and indirect effects (i.e., the total effect minus the direct effect). Although we have not formulated specific hypotheses about the total and indirect effects, we briefly discuss these effects below. [Table 4](#) and [Table 5](#) provide the total and indirect effects, respectively.

What we can take away from this pair of tables is that the size of the direct effects is much greater than of the indirect effects. For example, the total effects of *Organizational environment* and *Fit* on *Knowledge sharing* are small (although significant). They rather partially feed the engine of engagement that increases knowledge sharing, but do not have impact of practical significance.

Discussion

In this article, we report the findings from a study into the engagement and knowledge-sharing behavior of independent professionals within the organizations that have hired them on a (temporary) project basis. Engagement and knowledge sharing have been studied before from an employee perspective, but not in the context of independent professionals who have temporary positions within the organization. In so doing, our study seeks to answer a relevant practical question, too, as firms increasingly hire highly educated independent professionals for their expertise. Can the organization engage them and seduce them to conduct proactive behaviors to the benefit of the hiring organization in the form of knowledge sharing? We developed a path model of inputs, such as professional-project fit, the organizational environment and supervisor support, and find that these all positively influence project and/or organizational engagement. These feelings of engagement in combination with perceived supervisor support positively influence the degree of knowledge sharing that the independent professional does execute.

As any other study, ours is not without limitations, particularly given the fact that our study is the first of its kind. Specifically, the research design is not ideal, as the cross-sectional survey design implies that the causality between the variables of interest cannot be empirically established; only theory can help to suggest causal linkages. Moreover, we would have preferred to have had a larger and representative sample. For future research, therefore, a longitudinal (preferably, a balanced panel) design with (many) more observations representative for the population is to be recommended. Moreover, it would be highly interesting to include additional personal information about the professionals, such as their experience, personality and network. Regarding personality, we attempted this in the survey by including the short Big Five personality inventory, but the psychometrics demonstrated that the scales were not reliable enough to be included in the empirical analyses. Notwithstanding the downside of adding substantially to the length of the questionnaire, we plan to include instead the 60-items HEXACO personality scale in future work (cf. [van Witteloostuijn et al., 2017](#)).

The managerial implications to take from this study are fairly positive. Professionals who have been hired for their expertise share knowledge to a great extent. This proactive behavior, which is examined in the literature for (permanent) employees,

Table 3. Direct effects.

Dependent variables	Independent variables	Coefficient
Project Engagement		
	Fit	0.16* (0.070)
Organizational Engagement		
	Project Engagement	0.15*** (0.035)
	Organizational Environment	0.26*** (0.039)
	Supervisor Support	0.19*** (0.042)
	Fit	0.11~ (0.058)
Knowledge Sharing		
	Organizational Engagement	0.19*** (0.037)
	Project Engagement	0.11* (0.031)
	Supervisor Support	0.15*** (0.039)
N		693
R ²		0.202

Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05, and ~ p<0.1.

Table 4. Total effects.

Dependent variables	Independent variables	Coefficient
Project engagement		
	Fit	0.16* (0.070)
Organizational engagement		
	Project engagement	0.15*** (0.035)
	Organizational environment	0.26*** (0.039)
	Supervisor support	0.19***
	Fit	0.13* (0.059)
Knowledge sharing		
	Organizational engagement	0.19*** (0.037)
	Project engagement	0.13*** (0.032)
	Supervisor support	0.18*** (0.038)
	Organizational environment	0.05*** (0.012)
	Fit	0.04* (0.016)

Standard errors in parentheses; *** p < 0.001, ** p < 0.01, * p < 0.05, and ~ p < 0.1 (intercept estimated, but not recorded in table).

Table 5. Indirect effects.

Dependent variables	Independent variables	Coefficient
Organizational engagement		
	Fit	0.02~ (0.012)
Knowledge sharing		
	Project engagement	0.03*** (0.007)
	Organizational environment	0.05*** (0.012)
	Supervisor support	0.04** (0.011)
	Fit	0.04* (0.016)

Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, and ~ $p < 0.1$.

appears to be quite strongly embedded in the independent (temporary) freelancer as well. Independent professionals can also be engaged, surprisingly enough not only with their project, but (on average) even more so with the hiring organization. The results demonstrate that organizations will likely benefit from having the right professional in the right place for the right project. Fit is key. Although most projects are challenging and require a highly motivated professional, for those projects that are fairly simple, and do not contribute much to the portfolio of the professional, it would be preferable to hire a professional who is okay with that, instead of an overly motivated freelancer. Also, what is important, but perhaps more commonly overlooked by organizations, is to provide a caring organizational environment with high supervisor support to the freelancer professional. Even though independent professionals often portray themselves as little businesses, they very much appreciate being treated as a welcome

temporary member of the workforce. A caring and supportive environment, where they are treated not much differently from the employees in the organization, triggers freelancers to engage with the hiring organization, rather than the project. This may be beneficial for knowledge sharing, and possibly might make the hiring organization more attractive to return to in case of another project.

Ethical considerations

In the Dutch context at the time of the survey, ethical approval was not needed. Participation in the survey was voluntary, with their consent implied by their participation. All data were treated as strictly confidential, which was announced in the survey.

Data availability

Underlying data

Zenodo: Read me with DOI. <http://doi.org/10.5281/zenodo.2555739> (Barlage, 2019).

Data are available under the terms of the [Creative Commons Zero “No rights reserved” data waiver](#) (CC0 1.0 Public domain dedication).

Extended data

Zenodo: Gig Survey. <http://doi.org/10.5281/zenodo.2566243> (Arjan, 2019).

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