



## Can external interventions crowd in intrinsic motivation? A cluster randomised field experiment on mandatory accreditation of general practice in Denmark



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### ABSTRACT

Motivation crowding studies have demonstrated that external interventions can harm effort and performance through crowding out of intrinsic motivation, when interventions are perceived as lack of trust. However, motivation crowding theory also presents a much less investigated crowding in effect, which occurs when external interventions increase intrinsic motivation. This study empirically tests the motivational effect of a specific external intervention and its associations with the perception of the intervention. We draw on a cluster randomised stepwise introduction of a mandatory accreditation system in general practice in Denmark combined with baseline and follow-up questionnaires of 1146 GPs. Based on a series of mixed effects multilevel models, we find no evidence of motivation crowding out among surveyed GPs, although most GPs perceived accreditation as a tool for external control prior to its implementation. Rather, our results indicate that being accredited crowds in intrinsic motivation. This is especially the case when GPs perceive accreditation as an instrument for quality improvement. External interventions can therefore, at least in some cases, foster intrinsic motivation of health care professionals.

### 1. Introduction

Traditional agency theory assumes that monitoring and control motivate agents to increase effort and reduce shirking to avoid being penalized (Laffont and Martimort, 2002). However, a persistent claim in psychology and behavioural economics is that positive (e.g. monetary rewards) and negative (e.g. command and control schemes) incentive systems risk running counter to their intended purposes (Bénabou and Tirole, 2003). Rather than motivating agents, such interventions can crowd out intrinsic motivation, if individual agents perceive the external intervention as means of control (Frey, 1997). Intrinsic motivation is nurtured by self-determination, so if an individual perceives that an intervention limits autonomy and opportunities for exerting competent behaviour, intrinsic motivation is most likely reduced (Deci and Ryan, 1987). Motivation crowding theory has predominantly focused on this negative side of external interventions, but theory also suggests a positive potential of interventions in terms of

improving intrinsic motivation (Frey, 1997; Lohmann et al., 2016). Thus, external interventions can provide opportunities for displaying professional competence or improve the quality of work, through for example standardization, and such supportive interventions can, according to theory, increase intrinsic motivation.

While attempts outside of health economics have been made to investigate the relationship between external interventions and intrinsic motivation (e.g. Jacobsen et al., 2014), evidence on the motivational implications among health care professionals is in short supply. A critical question for policy makers in health care is therefore whether external interventions, such as accreditation systems, can hold unintended consequences of leaving the health care professionals less motivated to exercise daily job tasks or whether they can energize health care professionals by reinforcing their intrinsic motivation. We contribute to answering this important question by investigating the relationship between an external intervention in general practice and the intrinsic motivation of GPs. We utilize a cluster randomised stepwise

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introduction of a mandatory accreditation system among GPs in Denmark together with an exogenous baseline measure of GPs' perception of the accreditation system as supportive and/or controlling to offer a rigorous empirical test of the motivational effects of the external intervention and its associations with the GPs' perception of accreditation.

## 2. Institutional background

### 2.1. The organisation of general practice in Denmark

The Danish health care system is tax-financed and most GP services are free of charge. The GPs work as private entrepreneurs on contract with the health care authorities (Danish Regions). The agreement comprises a mixed capitation and fee-for-service system. In these years, Denmark experiences, as many other countries, a general as well as structural shortage of GPs (Pedersen and Gyrd-Hansen, 2014), and since 2007, the number of GPs has decreased by approximately 6% (The Organisation of General Practitioners in Denmark, 2016).

### 2.2. Accreditation of general practice in Denmark

From January 2016 to December 2018 all general practices in Denmark are going through a mandatory accreditation program rolled out in a stepwise cluster randomised process. The accreditation programme is part of the agreement between The Organisation of General Practitioners in Denmark and Danish Regions. The general practices were randomly assigned in clusters, defined by the 98 municipalities in Denmark, to undergo accreditation during 2016, 2017, or 2018. The order of practice accreditation within the municipalities was also randomised.

The accreditation program is developed and managed by a national accreditation agency, The Danish Institute for Quality and Accreditation in Health Care (IKAS). The accreditation scheme for general practice consists of 16 standards that each includes several indicators that the general practices should fulfil to a minimum requirement. The 16 standards cover four themes: 1) quality and patient safety, 2) patient safety critical standards, 3) good patient continuity of care, and 4) management and organisation. Most standards call for documentation on different working procedures in the practice; from how to identify patients, over documentation of medication reviews, to hygienic procedures. For more information on the content of the standards, we refer to IKAS's website (IKAS, 2017). The GPs are personally notified about the date for the assessment of the fulfilment of the accreditation standards and their indicators (the surveyor visit) one year in advance. The assessment is governed by defined rating principles and for each indicator, compliance is assessed as either *met*, *largely met*, *partially met*, or *not met*. Based on the surveyor visit, the Accreditation Award Committee decides on the award of accreditation status (IKAS, 2017). The accreditation status can take one of three final grades: *Accredited*, *accredited with remarks*, or *not accredited*. For a practice to become accredited without remarks, all patient safety critical standards should be assigned either *met* or *largely met*. The assessment lasts for three years.

The external intervention is a relatively low-powered non-financial incentive scheme in the sense that there are no hard sanctions linked to not being accredited. However, the intervention contains a reputational punishment, as the final assessment is made publicly available to peers, patients, and health care authorities on IKAS's website (<http://www.ikas.dk/afgørelser/almen-praksis/>).

## 3. Theoretical underpinning: motivation crowding theory

External interventions, such as accreditation, can according to neoclassic economic theories ensure better alignment between principal and agent preferences when it is difficult to monitor an agent's

behaviour (Holmström, 1979). Accreditation can thus be regarded as an attempt to impose behavioural requirements on the health care providers. Despite the straightforward logic, external interventions often fail to deliver on their promises (Frey, 1997). One explanation is that external interventions often ignore other types of work motivation than purely extrinsic motivational factors, and that external interventions can unintentionally affect these factors. A core expectation in motivation crowding theory is thus that interventions can affect intrinsic motivation negatively, if intrinsic motivational factors, derived from self-determination, are suppressed (Frey and Jegen, 2001). External interventions may therefore – in contrast to the intentions – reduce the agent's willingness to exert effort (e.g. Dickinson and Villeval, 2008; Falk and Kosfeld, 2006; Gneezy and Rustichini, 2000a; Jacobsen and Jensen, 2017).

Crowding out intrinsic motivation can be problematic, because intrinsic motivation often plays a vital role, especially when tasks are complex and interesting (Weibel et al., 2010), which is often the case in health care. Early studies have shown that intrinsic motivation – relative to extrinsic motivation – leads to, among other things, better conceptual learning, more cognitive flexibility, and enhanced wellbeing (Deci and Ryan, 1987). Moreover, intrinsic motivation has been shown to be a good predictor of behaviour (Vallerand and Bissonnette, 1992). Recent contributions from the health care sector shows that intrinsically motivated health professionals provide high quality care even in the absence of external incentives (Leonard and Masatu, 2010; Barigozzi and Burani, 2016; Lagarde and Blaauw, 2017; Leonard and Masatu, 2010). Given that intrinsic motivation is closely linked to effort, it is deemed to be a key determinant of performance and quality of care (Iezzi et al., 2014; Sicsic et al., 2012; Iezzi et al., 2014). Hence, for the sake of health professionals' well-being and the quality of patient care, it is critical that this type of work motivation is not crowded out by external interventions.

Motivation crowding theory (Frey, 1997; Frey and Jegen, 2001) assumes that interventions can be perceived as control, in turn diminishing agents' efforts by reducing their intrinsic motivation. This mechanism is termed motivation crowding out. Given that intrinsic motivation depends on volition and self-determination, intrinsic motivation can be crowded out, if an intervention is perceived as a lack of trust, restriction of autonomy, or a requirement to engage in less meaningful work. On the other hand, intrinsic motivation also positively depends on environmental factors, and interventions can in some instances provide a more reliable framework for positive feedback and communication with superiors. Such interventions are more likely to be perceived as supportive, which is expected to nurture and enhance – crowd in - intrinsic motivation. Thus, the perception of interventions is, according to motivation crowding theory, vital for understanding how external interventions affect intrinsic motivation (Frey, 1997; Frey and Jegen, 2001).

Empirical evidence on how external interventions affect intrinsic motivation is in short supply. The typical approach revolves around the investigation of whether the introduction of external financial or non-financial incentives leads to an alteration in performance by health care professionals; often with mixed or ambiguous results (Galizzi et al., 2015) (See Scott et al. (2011) and Chauhan et al. (2017) for reviews in primary care. See also Kolstad (2013) and Gneezy and Rustichini (2000b) for important contributions to the field). Based on theoretical expectations, several studies explain their findings by motivation crowding out, although none of them investigate this directly (e.g. Fiorentini et al., 2011; Fiorentini et al., 2013; Holmås et al., 2010; Iezzi et al., 2014). Few studies have attempted to empirically measure the presence or extent of intrinsic motivation by surveying or interviewing physicians (see e.g. Sicsic et al., 2012; Berdud et al., 2016). Another approach has been to study job satisfaction in the context of motivation crowding out and financial incentives (see e.g. Allen et al., 2017).

Thus, the existing motivation crowding literature predominantly focuses on motivation crowding out. Recent studies have, however,

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