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Exploring the motivational bases of public mission-driven professions using a sequential-explanatory design

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ABSTRACT

This study disentangles the motivational forces that drive the preferences of public sector professionals engaging in mission-driven jobs. Building on self-determination theory, two discrete choice experiments and a qualitative inquiry show that nurses preferred jobs with less overtime, higher salary, visibility for the profession, higher social impact, numerous and frequent contacts with patients, and higher autonomy. Results also highlighted that managing more subordinates may not be unconditionally desirable. Implications stretch beyond nursing to other public professions in crisis and discuss the role of public human resource management in the broader human resource management literature.

KEYWORDS Public human resource management; mission-driven profession; health service provision; self-determination theory; mixed methods

Introduction

Research into the motivational bases of mission-driven professions is receiving unprecedented attention from both social scientists and practitioners (e.g., Bolino and Grant 2016; Bó, Ernesto, and Rossi 2013; Deci and Ryan 2000; Deci, Olafsen, and Ryan 2017; Perry, Hondeghem, and Wise 2010). In the context of public management theory and practice, in particular, the concept of public service motivation has attracted scholarship and stimulated debate more than any other topics in recent years (e.g., Bozeman and Xuhong 2015; Christensen, Paarlberg, and Perry 2017; Ritz, Brewer, and Neumann 2016; Marvel and Resh 2018; Parola et al. 2018; Perry 2014). Although research in this area has almost become a growth industry, the narrowness of the public service motivation construct coupled with methodological limitations, such as the paucity of randomized controlled trials (e.g., Ritz, Brewer, and Neumann 2016) and mixed-methods designs (e.g., Hendren, Luo, and Pandey 2018; Raimondo and Newcomer 2017), have so far hindered a comprehensive causal understanding of the motivational forces that drive the preferences of public sector professionals engaging in mission-driven jobs.

This study aims to reduce this knowledge gap by investigating the job preferences of a sample of nurses and nurse managers working at a public local health authority, using self-determination theory (Deci and Ryan 2000) as a theoretical lens and a sequential-explanatory mixed-methods approach (Mele and Belardinelli 2018) as a methodological



tool. More precisely, two discrete choice experiments (Ryan et al. 2012) provide a one-time snapshot of the motivational determinants of job choice. Discrete choice experiments allow estimating how various motivational forces independently and simultaneously affect preferences. More precisely, responses show which motivational drivers are relevant, how important one force is in comparison to another, and the probability of subjects preferring a job with specified attributes. Then, a qualitative inquiry (Fereday and Muir-Cochrane 2006) illuminates the debates about how job architecture can satisfy an individual's psychological needs and whether work motivation is a stable trait or a dynamic state.

Our sample may be relevant for several reasons. Firstly, healthcare workers are the quintessence of public sector professionals in crisis (e.g., Noordegraaf 2007; Sarto, Veronesi, and Kirkpatrick 2018). Indeed, the very nature of a nurse's job entails a high level of autonomy, which has traditionally been associated with considerable discretionary power and a distinctive professional identity (e.g., Brunetto et al. 2018; Farr-Wharton, Brunetto, and Shacklock 2011). Over the last decades, New Public Management inspired reforms, along with technological changes, outcome-based auditing systems, and the deployment of business process engineering logics, have been eroding the power base of healthcare professionals, who now face greater scrutiny from end users and increased pressure from policy makers and managers (e.g., Diefenbach 2009; Farr-Wharton, Brunetto, and Shacklock 2011). Another reason why our sample may be valuable is that nurses are a key component of the healthcare system. Policy makers at all government levels and managers in healthcare organizations are considering major revisions to nurses' job duties and responsibilities. A successful implementation of initiatives aimed at reducing personnel shortages requires a deep understanding of the motives that drive nurses' preferences and choices. Models of job choice and work motivation native to mainstream management and applied psychology have been used in public administration scholarship to investigate what drives public sector employees' job preferences (e.g., Andersen and Kjeldsen 2013; Belle and Cantarelli 2015, 2018; Kjeldsen and Jacobsen 2012; Lewis and Frank 2002; Van de Walle, Steijn, and Jilke 2015; Vandenabeele 2008). Research on what drives public sector nurses' job preferences is less developed (e.g., Brunetto et al. 2018).

From a theoretical standpoint, the rationale for grounding our study in selfdetermination theory is that it provides a comprehensive framework that allows reconciling and integrating the construct of public service motivation, which is native to public management (e.g., Perry and Wise 1990; Perry, Hondeghem, and Wise 2010; Vandenabeele 2007), with analogous or complementary concepts from related disciplines (e.g., Bolino and Grant 2016). Thanks to its comprehensiveness, selfdetermination theory has rapidly become one of the most established motivation theories and is rapidly gaining hegemonic status across the social sciences. Therefore, using self-determination theory may help avoid the segregation of public human resource management scholarship from the mainstream human resource management literature (e.g., Battaglio 2014; Beattie Rona and Waterhouse 2014; Breaugh, Ritz, and Alfes 2017; Chen and Bozeman 2013; Chen and Hsieh 2015).

From a methodological standpoint, this work respond to recent calls to conduct multi-method work because 'triangulation across several methods has the potential to increase our confidence in the validity and meaningfulness of our research' (Perry 2012, 481). More precisely, this study combines results from two discrete choice experiments with qualitative evidence from in-depth semi-structured interviews in an attempt to advance causal understanding of the motivational forces that drive public sector professionals' preferences. Whereas randomized control trials are best suited to



provide an unbiased estimate of the average effect generated by an intervention of some kind, qualitative inquiries describe the micro-foundations of the observed behaviors and preferences (e.g., Belle and Cantarelli 2017).

The motivational bases of public mission-driven professions

Extant evidence shows that employees' motivational capital influences their job and sector preferences. For example, a recent systematic review of the antecedents and consequences of public service motivation located 35 studies that investigated the relationship between motivation and occupation or employment sector choice (Ritz, Brewer, and Neumann 2016). Relatedly, meta-analytic findings unveil that person-job fit and job satisfaction are highly correlated (.56) in the public sector (Cantarelli, Belardinelli, and Belle 2016).

Work motivation has been defined as 'the psychological processes that direct, energize, and maintain action toward a job, task, role, or project' (Grant and Shin 2011, 2). Self-determination theory suggests that individuals have three basic psychological needs. The first is autonomy, which refers to the 'desire to self-organize experience and behavior and to have activity be concordant with one's integrated sense of self (Deci and Ryan 2000, 231). The second basic psychological need is competence, which is linked to the necessity of having 'an effect on the environment as well as to attain valued outcomes within it' (Deci and Ryan 2000, 231). Lastly, relatedness is the 'desire to feel connected to others - to love and care, and to be loved and cared for' (Deci and Ryan 2000, 231). As long as employees simultaneously feel autonomous, competent, and related to others, they are psychologically healthy. Building on this framework, we provide a panel of work motivation hypothesis classified as external, introjected/identified/integrated, and intrinsic regulations.

External regulation

At the core of self-determination theory lies the distinction between extrinsic and intrinsic motivation. Extrinsic motivation is a continuum with four main levels of increasing self-determination: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation entails the undertaking of actions in direct response to external pressures. External regulation is the employees' state of non-self-determination, actuated by the desire to obtain an outside reward or to avoid an outside punishment, . Typical external regulation tools that organizations can leverage include working hours, job responsibilities, permanent salary raises, onetime financial bonuses, and lay-off threats. As required overtime hours may undermine individuals' ability to self-organize job and family activities, we tested the following hypothesis:

Hp 1: Nurses prefer jobs that require fewer overtime hours.

Abundant evidence shows that monetary incentives are not unconditionally successful in boosting performance (e.g., Weibel, Rost, and Osterloh 2010). For example, the size of the financial bonus makes the difference (e.g., Belle and Cantarelli 2015; Gneezy and Rustichini 2000). Nonetheless, healthcare organizations are not alone in using material rewards meant to enhance employees' sense of competence.

Drawing on this scholarship and assuming that nurses' average salaries are at medium to medium-low levels, we formulated and tested the following hypothesis:

Hp 2: Nurses prefer jobs that pay a higher salary.

Increasing one's supervised staff may have a two-sided impact on the need to connect with others. On the one hand, a greater number of reports may provide more opportunities to cultivate meaningful and positive relations. On the flip side, a larger staff may be more challenging and come at the cost of increased administrative burden and bureaucratic roles. We may expect those two opposite effects to cancel each other out. Thus, we formulated and tested the following hypothesis:

Hp 3: The number of reports/supervised employees has no effect on nurses' job preferences.

External regulation may be triggered by either tangible elements - such as one's salary – or intangible factors – such as the opportunity of being publicly recognized. Previous work has investigated the performance effects of image motivation, which is triggered by the desire to be liked by others (e.g., Ariely, Bracha, and Meier 2009; Belle 2015). The degree of self-visibility taps into the desire to connect and care for others in the external regulation paradigm. Based on these premises, we formulated the following hypothesis:

Hp 4: Nurses prefer jobs that provide more opportunities for public recognition.

Introjected - identified - integrated regulation

Introjected regulation generates from internal feelings, that include pride, guilt, and/or a need for self-approval or approval from others. Identified regulation emanates from the need to act consistently with a personal value system and is caused by neither internal nor external sources. Integrated regulation is an extrinsically motivated state that is closer to intrinsic motivation. When subjects are in a state of integrated regulation, they act because a given activity's value has become internalized as part of their habitual functioning and self-identity. As such, it is the most self-regulated state within the extrinsic motivation spectrum. Building on self-determination Grant (2007, 2008) characterized prosocial motivation as a state of introjected or identified regulation. Prosocial motivation is the desire to connect, interact, and create benefits to others, such as colleagues and clients. Within this realm, relational job design theory (Grant 2007) acknowledges that workers' behavior and identity outcomes are functions not only of the job's task structure but also of its relational architecture. More precisely, the job impact on beneficiaries and the contact with beneficiaries connect employees in mission-driven organizations with the impact of their actions. Job impact depends on the degree to which jobs provide opportunities to 'make a lasting difference or an ephemeral difference in beneficiaries' lives, affect many or few beneficiaries, impact beneficiaries daily or occasionally, and prevent harm or promote gains to beneficiaries' (Grant 2007, 396). The contact with beneficiaries, on the other hand, is 'the degree to which a job is relationally structured to provide opportunities for employees to interact and communicate with the people affected by their work' (Grant 2007, 398)



and varies based on frequency, duration, physical proximity, depth, and breadth. Altogether, the impact on and the contact with beneficiaries affect effort, persistence, and helping-behaviors through perceived impact and affective commitment, which satisfy individuals' needs for competence and relatedness. Building on this framework, we formulate the following hypotheses:

- Hp 5: Nurses prefer jobs that have a larger impact on beneficiaries.
- Hp 6: Nurses prefer jobs that create benefits for more rather than fewer beneficiaries.
- Hp 7: Nurses prefer jobs that provide more frequent contacts with beneficiaries.

Intrinsic regulation

Intrinsic motivation is the desire to expend efforts on the job based on the interest in and enjoyment of the work tasks and activities in and of themselves. Intrinsic motivation or regulation is a fully self-determined state. The construct of intrinsic motivation has been operationalized as a sense of autonomy and interest in the job (Grant 2008). Both tend to enhance one's sense of autonomy, competence, and relatedness. Drawing on this scholarship, we formulated and tested the following hypotheses:

Hp 8: Nurses prefer jobs that provide more autonomy in making decisions.

Hp 9: Nurses prefer jobs that entail interesting/engaging rather than boring/routine tasks.

Work motivation: stable trait or dynamic state?

Extant scholarship consistently shows that the types of regulation are not mutually exclusive and vary based on the job tasks. For instance, the interaction of intrinsic and prosocial motives predicts higher persistence, performance, productivity (e.g., Grant 2008), and creativity (e.g., Grant and Berry 2011) than either of the two alone. Similarly, monetary rewards enhance performance for non-interesting tasks but are ineffective for interesting tasks (e.g., Weibel, Rost, and Osterloh 2010). Indeed, tangible rewards are virtually omnipresent in organizations.

Evidence on whether one's primary work motivation is a stable trait or a dynamic state is less conclusive (e.g., Belle 2013; Cable and Parsons 2001; Christensen, Paarlberg, and Perry 2017; Grant and Shin 2011; Wright and Grant 2010). For instance, whereas a randomized manipulation boosted subjects' public service motivation (e.g., Belle 2013; Pedersen 2015), other longitudinal data revealed that public service motivation was a relatively stable trait over a sixteen-year time window (e.g., Vogel and Kroll 2016). Exploring the degree to which 'the factors that sustain motivation [are] different from those that initiate it - and if so, how, why, and when' (Grant and Shin 2011, 24) has relevant practical implications. Indeed, organizations may focus efforts on attraction-selection-attrition mechanisms if work

motivation is a stable trait and on socialization and adaptation if work motivation is a dynamic state. Adding evidence to this issue is an additional contribution of our research.

A seguential-explanatory mixed-methods design

Figure 1 portrays the theoretical framework and methodological approach of this work. The experimental test consists of two discrete choice experiments that explore whether and how different job attributes independently and simultaneously influence professionals' job preferences and how much of an attribute respondents would be willing to give up for improvements in other attributes. The qualitative inquiry employs in-depth semi-structured interviews to illuminate (i) whether and how our job attributes tap into the psychological needs of autonomy, competence and relatedness and (ii) whether work motivation is a stable trait or a dynamic state.

The discrete choice experiments

Discrete choice experiments allow estimating the relative importance of various factors – called attributes - that simultaneously and independently affect an individual's preference when making decisions such as selecting a job (e.g., Belle and Cantarelli 2017; Ryan et al. 2012). In a discrete choice experiment, subjects typically are presented with a series of pairs of options (e.g., pairs of job offers) that vary with respect to certain attributes (e.g., salary, working hours, career opportunities) and are asked to pick one option from each pair. To maximize the ecological validity and contextual relevance of our investigation, we ran a handful of focus groups with the head of the nursing staff and a few nurse managers from the local health authority to pinpoint the factors and factor-levels that might be most relevant in determining job preferences. We repeated this procedure for the two main targets of our study: nurses or higher and nursing assistants.

We tested hypotheses 1, 2, 3, 4, 5, 6, and 8 on a sample of nurses and nurse managers. They were asked to indicate which one of two jobs (X or Y) they preferred. Jobs were

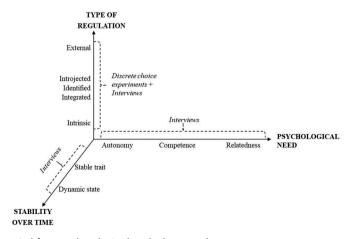


Figure 1. Theoretical framework and mixed-methods approach.

Source: Adapted from Deci and Ryan (2000).

equal in every respect except for seven attributes that we manipulated at two levels, higher or lower. Job X and job Y differed in terms of: overtime (8 vs 2 hours per week), net monthly salary (€2,000 vs €1,800), number of subordinates (150 vs 50), visibility (many vs few opportunities to be publicly recognized), job impact on patients' life (large vs limited), number of beneficiaries (many vs few patients cared for), and autonomy in making decisions (60 percent vs 40 percent of the time). The permutation of the seven attributes with two levels each generated 128 (i.e. 2⁷) unique job profiles, from which we built 128 choice sets. We used the unique job profiles to define the characteristics of job X in the choice sets. Then, we used a foldover approach (e.g., Street, Burgess, and Louviere 2005) to describe the characteristics of job Y in the choice sets: in each choice set, the levels of job Y were the opposite of the levels of job X for all attributes. For instance, if job X had a limited impact on patients and a net monthly salary of €2,000, then job Y had a large impact on patients and a net monthly salary of €1,800. In short, in each choice set, professionals were asked to choose between two job offers that were the mirror image of each other.

We tested hypotheses 2, 4, 5, 6, 7, 8, and 9 on a sample of nursing assistants. The design of the discrete choice experiment dedicated to nursing assistants was identical to that administered to nurses except for the attributes and attribute levels. Nursing assistants were asked to select between two jobs that differed along the following factors and levels: net monthly salary (€1,400 vs €1,300), chances to be publicly recognized (many vs few), impact on patients' life (large vs limited), beneficiaries cared for (many vs few patients), frequency of contact with beneficiaries (always vs rarely in touch with patients), autonomy in making decisions (30 percent vs 10 percent of the time), enjoyment of job tasks (interesting/stimulating vs boring/repetitive).

We used multilevel mixed effects logistic regressions to analyze the data of the discrete choice experiments because the outcome variable was binary and the data were hierarchical, with eight observations per respondent (Ryan et al. 2012). Indeed, to limit cognitive fatigue and avoid overload, participants indicated their preference for job X or job Y for only eight choice sets, which were picked randomly from the 128 possible choice sets. The inclusion of a continuous price-proxy attribute in a discrete choice experiment allows the estimation of the monetary value of other attributes. More precisely, how much of the continuous attribute a subject would be willing to give up for improvements in other attributes signals her/his willingness to pay (WTP). The WTP is usually computed as the ratio of the coefficient of an attribute to the coefficient of the price-proxy attribute. In our study, we used the net monthly salary as the price-proxy to estimate WTP.

Professionals in our discrete choice experiments were employed by one local health authority in Northern Italy. Local health authorities are responsible for planning and delivering healthcare and social services to citizens in a specific geographic area. The nursing staff of Italian local health authorities fall into three main categories: nursing assistants, nurses, and nursing managers. All are usually employed full time with lifelong public contracts. Nursing assistants are trained to attend to patients' and clients' needs under the supervision of nurses and medical doctors. Nurses hold a university degree and perform specialized health-related tasks. Lastly, nurse managers hold advanced university degrees; they are responsible for managing services and/or personnel and are rarely have direct contact with patients. We administered the experimental survey through Qualtrics. The final sample was composed of 463 professionals (26 per cent response rate). Average age was 46 years (SD = 10). Female were 81 per cent and males 19 per cent.



About 8 per cent of participants were healthcare assistants, 72 per cent nurses, and 20 per cent nurse managers.

The in-depth semi-structured interviews

We conducted in-depth semi-structured interviews with a sample of professionals working for the local health authority that took part in this project in order to gain a more fine-grained understanding of the mechanisms through which the job attributes that we manipulated in the discrete choice experiments influence preferences. Following a sequential-explanatory approach (Mele and Belardinelli 2018), our qualitative inquiry was aimed at complementing the experimental evidence by exploring the micro-mechanisms behind the observed effects or lack thereof. To this end, we interviewed a convenient sample of eight employees from the local health authority. The final sample varied based on managerial responsibilities and medical specialty. Interviewees were five nurses and three nurse managers working in the emergency, image diagnostic, chronic, or maternity units. Our interview protocol entailed the use of a set of questions mirroring the attributes that we had previously tested in the discrete choice experiments. More precisely, interviewees were asked to describe and provide vivid examples and opinions about their working schedule, salary, relationships with subordinates, visibility of work and achievements, job impact on beneficiaries, typologies and number of beneficiaries, frequency of contact with beneficiaries, decision-making autonomy, and enjoyment of the job tasks. Further, they were prompted to recall and describe the reasons that led them to select and socialize in their profession. Each interview lasted about 30 minutes.

In coding the transcripts of our eight semi-structured interviews, we combined two complementary criteria. On the one side, we employed a deductive a-priori coding, which entailed the classification of interview statements against the theoretical dimensions predicted by self-determination theory. In other words, we tried to map responses onto selfdetermination theory. For instance, we classified any statements that interviewees made about their salary as instances of external regulation. On the other side, we used a datadriven inductive coding, which entailed the identification of responses that complemented and specified the core constructs of self-determination theory. More precisely, we kept track and made synthesis of interview statements that broadened or deepened the selfdetermination regulations spectrum. For example, we classified comments about the degree of equity in salary among public service professions to add nuances to the original external regulation dimension of self-determination theory. Overall, our deductive and inductive coding was meant to allow themes to emerge from the transcripts rather than to calculate response rates or frequency of occurrence of specific concepts (Fereday and Muir-Cochrane 2006; Krippendorff 2004).

Results

Motivational regulations – nurses and nurse managers

Table 1 shows the results of the discrete choice experiment for nurses and nurse managers, separately and jointly. For each of the attributes, Table 1 displays the factor changes in odds (e^{β}) for a one-unit increase in the independent variable as well as the unstandardized coefficients (β) with the associated standard errors (SE), z-scores (z), and

Table 1. Multilevel mixed-effects linear model predicting the job preferences of nurses and nurse managers, jointly and separately.

	_	lurses	andr	Nurses and nurse managers	nager	S			Nurses	ses				Ē	urse r	Nurse managers	S	
Attribute – Attribute levels	eγβ	β	SE	Z	р	WTP	eΛβ	β	SE	Z	р	WTP	eγβ	β	SE	Z	р	WTP
Overtime – 8 (2) hours per week		87	60:	-10.13	000	1.30	39		.10	-9.46	900	1.45 .47	.47	76	- 81.	-4.22	000	66:
Salary – €2,000 (1,800) net monthly	1.95	.67	60:	7.84	000:		1.91		.10	6.61			2.14	9/.	.18	4.25	000:	
N. subordinates – 150 (50)	.93	07	80:	86	388		1.04		.10	36			.63	46	.18	-2.61	.009	.61
Visibility – Many (few) chances for public recognition	1.04	.03	80:	4.	.678		1.10	.10	.10	1.03			.82	20	.17	-1.14	.253	
Job impact – Large (limited) impact on patients' life	1.41	34	80:	4.05	000:		1.42		.10	3.62		.55	1.32	.27	.18	1.57	.117	
N. beneficiaries – Improve the life of many (few) patients		1.49		17.04	000:	2.23	5.04		.10	15.95		2.51	2.92	1.07	.18	6.01	000:	1.41
Autonomy – 60 (40) % of the decisions taken autonomously		.48	80:	5.73	000:		1.50		.10	4.20		.63	2.19	.78	.18	4.41	000:	1.03
Constant	.37	99		-7.69	000:		.34		.15	-7.25			.56	59	.26	-2.27	.023	
N. subjects			•	128					33	9						32		
N. observations			w.	,350					2,6	26						24		
Wald χ_2			4	113.01					343	343.69					×	30.17		
$p > \chi^2$			•	000					0.	00					٠.	000		

p-values. Attributes have a positive impact on the take-up of a given job if the coefficient is greater than zero, whereas attributes have a negative impact on the take-up of a given job if the coefficient is smaller than zero. When appropriate, Table 1 also reports the estimated willingness to pay (WTP).

Keeping everything else constant, professionals in the pooled sample preferred jobs that required 2 rather than 8 overtime hours per week, secured €200 more net monthly salary, had a large rather than limited impact on others, provided the opportunity to benefit many rather than few patients, and provided autonomy in making decisions 60 percent rather than 40 percent of the time. To the contrary, all else being the same, having 50 instead of 150 subordinates and few rather than many opportunities to be publicly recognized did not affect job preferences in the pooled sample. More precisely, other things being equal, the odds that healthcare professionals would choose a job increased by 1.95 times (p < .001) when the salary was higher, by 1.41 times (p < .001) when the impact on beneficiaries was larger, 4.44 times (p < .000) when the number of beneficiaries was bigger, and by 1.62 times (p < .001) when the position provided more autonomy in making decisions. The odds of preferring a job, instead, decreased by .42 times (p < .000) when it required more overtime. Lastly, the visibility of one's work and the number of subordinates had no significant impact on the job decisions of the pooled sample (p = .678 and p = .388, respectively). Drawing on the relational job design framework, we also tested for difference in significance between the magnitude of job impact and the number of beneficiaries affected. The variation in the quantity of patients affected had a larger effect on the take-up of a job position compared to the variation in job impact in the pooled sample (p < .001). Everything else held constant, nurses and nurse managers were willing to sacrifice 2.23 percentage points of salary increase to take on a job position that served many rather than few patients, .73 percentage points to have more decision-making autonomy, .51 percentage point to have a larger job impact, and 1.30 to work fewer overtime hours. Overall, data in Table 1 for the pooled sample seem to support hypotheses 1, 2, 3, 5, 6, and 8 and fail to support hypothesis 4.

We replicated the same analyses for the nurse and the nurse managers separately (Table 1). The pattern of results for nurses' job preferences is the same as for the pooled sample. Nurse managers' preferences for a job, instead, differed from those of the pooled sample along two target constructs. On the one hand, the magnitude of impact on beneficiaries did not affect nurse managers' job choices (p = .117). On the other hand, the odds that a nurse manager preferred a job decreased when the number of subordinates to manage increased from 50 to 150 (p < .01). As such, nurse managers were not willing to give up salary increases to have a larger impact on beneficiaries but were willing to sacrifice .61 percentage points to supervise fewer nurses.

Table 2 complements the findings of the experimental test with nurses and nurse managers by displaying the first-order themes emerging from the in-depth semistructured interviews about the determinants of job preferences (Appendix 1). Content analysis of the responses allowed not only a more fine-grained understanding of the mechanisms behind the effect of motivational regulations on job choice but also a more nuanced knowledge of how the attributes tap into the psychological needs of autonomy, competence, and relatedness described in self-determination theory.

Evidence from our interviews suggests that working overtime threatens one's sense of autonomy by affecting family time unpredictably. Further, overtime is discouraged by the organization because it generates extra costs and administrative burden to coordinate

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INTRINSIC MOTIVATION	INTRINSIC REGULATION	Autonomy allows self-organizing ('Autonomy is the satisfaction of doing the profession that I love')	Autonomy is a recognition of one's competencies ("I would like to have more autonomy based on the knowledge and skills that I have gained over the years in the field") Interesting tasks allow one's personal and professional growth ("Bureaucratic procedures are time wasting: for any newborn, about one hour is lost on paperwork". "Managing shifts is boring. System planning is interesting")	(Continued)
IOTIVATION	INTROJECTED – IDENTIFIED – INTEGRATED REGULATION		More salary would be a recognition of one's experience, competence, and working conditions (There is not significantly more salary when working on national holidays, but there should be?); strengthen equity compared to the stakes at play (Dealing with people and human life is a responsibility, a bit higher salary would be appropriate?) and to other professions (Teachers are paid as much as we are. Even though they have an impact, it is not life or death.) Managing more subordinates is a career promotion (Managing more subordinates is a challenge to one's self: one can test how much his/her managerial skills are real and understand how much his/her ideas and suggestions are doable). Having an impact is rewarding when I am fully confident in what I am doing and saying); facilitates subordinates' work so that patients' experience improves (I would love to alleviate the financial pressure on my team so that they can focus on managing healthcare services); contributes to the achievement of organizational goals (I like having an impact on the organizational as a whole by making the best use of its resources)	
EXTRINSIC MOTIVATION	EXTERNAL REGULATION	Overtime unpredictably threatens one's family time (1 am happy to take planned breaks between shifts); is discouraged by the organization (1My supervisor pays attention to avoiding overtime?).		
		NEED FOR AUTONOMY	OOMPETENCE	

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	EXTRINSIC MOTIVATION	10TIVATION	INTRINSIC MOTIVATION
	EXTERNAL REGULATION	INTROJECTED – IDENTIFIED – INTEGRATED REGULATION	INTRINSIC REGULATION
NEED FOR RELATEDNESS	Managing more subordinates entails striving to balance conflicting goals ('Planning working shifts so that everybody is able to contribute her/his best is a burdensome task'); engaging in stressful personal relationships ('The supervisor is the scapegoat, the punching ball of many'); affecting subordinates' family time (All of many'); affecting subordinates' family time (All of many'); affecting subordinates' life through setting workling hours is demanding! Visibility is rewarding when on a one-to-one basis with colleagues and patients ('It is rewarding when you run into mums who remember that 'you were there when my daughter was born' and the daughter is now twenty'); but still missing for the identity of the profession as a whole ('We need to promote awarneess of the content of our promote awarneess of the content of our	Having many beneficiaries is rewarding as long as the number of patients that I treat in one shift allows mumber of patients that I treat in one shift allows me to learn their names and look them in the eyes?); empathy and conflict do not become too stressful ("Sometimes I empathize too much; anything that is not as it should be hurts me"). Frequent contacts with patients: they mainly need you to listen to them"); with subordinates, I have timely knowledge of anything that can be improved")	Autonomy allows facilitating others' work ('If I use my autonomy to plan procedures correctly, external stakeholders – such as firefighters, police forces, and volunteer associations – are also facilitated')

shifts and absences afterwards. As for the salary, professionals discussed that an increase in net pay would be a recognition of their knowledge and would strengthen perceptions of equity compared to the stakes at play, which are high, and to other professions. A higher salary seemed to enhance the sense of competence. On average, interviewees highlighted that having a larger impact on beneficiaries promotes the need for competence conditionally on teaching to others what one has mastered, simultaneously facilitating subordinates' work and improving patients' experience, and contributing to the achievement of organizational goals. Similarly, having more beneficiaries might not be unconditionally desirable. More precisely, only when the number of beneficiaries is bearable and the empathic engagement does not turn into stress, caring for more patients satisfies the need for relatedness. The frequency of contacts with beneficiaries also enhances the sense of relatedness: being in frequent contact with patients is a core value of the nursing profession, whereas being in frequent contact with subordinates enables a timely awareness of organizational and service dysfunctions. As predicted by self-determination theory, having more autonomy enables the satisfaction of all three psychological needs and performing more interesting tasks satisfies the need for competence. Content analysis of the responses consistently reveals that managing a larger number of subordinates may be a double-edged sword. On the one hand, coordinating more colleagues is a career promotion and, therefore, strengthens one's perceived competence. On the other hand, however, this also requires a continuous search for balance between clashing employees' and organization's goals, leads to engagement in one-to-one stressful relationships, and affects subordinates' family time through the allocation of shifts and vacations. Thus, managing more subordinates also threatens one's need for relatedness. Lastly, interviewees tended to care about being recognized on a one-to-one basis by colleagues and direct beneficiaries. As far as visibility in the broader community was concerned, instead, respondents almost unanimously called for full public recognition as a professional group rather than as individuals.

Motivational regulations – nursing assistants

Table 3 displays the results of the discrete choice experiment on nursing assistants' job preferences. The odds that nursing assistants would choose a given position increased by 1.93 times when the net monthly salary was higher by $\in 100$ (p = .011), 1.79 times when

Table 3. Multilevel mixed-effects linear model predicting nursing assistants' job preferences.

		Nu	rsing	assistan	its	
Attribute – Attribute levels	e^β	β	SE	Z	р	WTP
Salary - €1,400 (1,300) net monthly	1.93	.66	.26	2.53	.011	
Visibility – Many (few) chances for public recognition	1.08	.08	.27	.29	.772	
Job impact – Large (limited) impact on patients' life	1.33	.28	.26	1.08	.280	
N. beneficiaries – Improve the life of many (few) patients	1.79	.58	.26	2.24	.025	.89
Contact with beneficiaries – Always (rarely) in contact with patients	2.94	1.08	.27	4.06	.000	1.63
Autonomy – 30 (10) % of the decisions taken autonomously	1.18	.17	.26	.64	.522	
Intrinsic regulation – Boring (interesting) job	1.64	.49	.26	1.88	.060	.75
Constant	.18	-1.74	.38	-4.60	.000	
N. subjects				35		
N. observations			2	276		
Wald χ2			3	2.12		
$p > \chi 2$				000		

the job provided the opportunity to improve the life of many rather than few patients (p = .025), and 2.94 times when the job provided the chance to be in contact with patients all the time rather than rarely (p < .001). Having an interesting instead of a boring job marginally increased the selection of a given position (p = .060). Lastly, nursing assistants' preferences were not affected by being publicly recognized many instead of few times (p = .722), having a larger rather than limited impact on patients' lives (p = 280), or having autonomy in making decisions 30 percent rather than 10 percent of the time (p = .522). The pairwise test of difference in significance between the coefficients of the number of patients served and the frequency of contact with patients was statistically insignificant (p = .204). In other words, the variation in the number of patients served and the variation in the frequency of contact had a comparable effect on the odds of preferring a given job position. WTP estimates indicated that nursing assistants were willing to sacrifice 1.63 percentage points of salary increase to be in contact with patients more frequently, .89 percentage points to expand the number of beneficiaries affected, and .75 percentage points to have a more intrinsically motivating job. Overall, the evidence in Table 3 supports hypotheses 2, 6, and 7, marginally supports hypothesis 9, and fails to support hypothesis 4, 5, and 8.

Work motivation: stable trait or dynamic state?

The deductive and inductive content analysis of our in-depth semi-structured interviews also contributes novel empirical evidence to the debate about whether the different typologies of work motivation and regulation are a stable trait or a dynamic state. Overall, our qualitative inquiry seem to suggest that organizations may turn a job into a calling through socialization and adaptation mechanisms (Table 4). Due to the convenient nature and limited size of our sample, those qualitative insights cannot be considered generalizable nor conclusive. Nevertheless, they may prove valuable in pointing to promising directions for future mixed-methods research on the same topic.

The reasons for self-selecting into public healthcare entail a few common themes. More precisely, as far as external regulation is concerned, the motives to enter such a profession revolve around the security of the job and the chances of having a steady paycheck, the ease of finding a job, the opportunity to complete a university degree, and the need to meet financial needs after unexpected family events. The introjected/ identified/integrated motives to self-select into nursing involve an intuitive identification with the profession's values and the inspiration of one's role model. Lastly, the reason to work into public healthcare delivery that taps into intrinsic regulation is related to doing something that one is passionate about.

Interviewees, then, tended to socialize and adapt in their profession because they actually identified with the values of working in a public mission-driven organization, received positive approval of their behaviors and attitudes at work from colleagues, wanted to act consistently with their personal values of doing good and behaving conscientiously, and had no incentive to move after selecting into the profession.

Discussion and conclusion

This study adopted the theoretical framework of self-determination theory and employed a sequential-explanatory mixed-methods approach to investigate the motivational bases of healthcare professionals' job preferences in the context of a public

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INTRINSIC MOTIVATION	INTRINSIC REGULATION	Doing things one is passionate about – 'Curiosity about the 1990s reforms aimed at introducing a managerial approach into healthcare led me to strengthen my managerial skills through a master program,' 'I like anything linked to image editing'	Status quo – 'After giving nursing a trial, I liked it and kept on doing it'
IOTIVATION	Introjected – Identified – Integrated Regulation	Intuitive identification with the profession's values – 'Attracted by stories about nursing,' 'Desired to help others since I was a child'. Following one's role model – 'Inspired by the instructor for Obstetrics and Gynecology university course'	Actual identification with the profession's values – 'I fell in love with the job as I was doing it,' My job eventually became my calling,' I convinced myself to like the job eventually' Getting approval from colleagues – 'Colleagues agree that it looks like I have always wanted to be a nurse, even if my dream job was another one' Acting consistently with one's values – 'I try to do good and behave conscientiously in just about anything'
EXTRINSIC MOTIVATION	EXTERNAL REGULATION	and selection into not my dream job but it provided security and steady paycheck – 'Nursing was and selection into not my dream job but it provided security and steady salary' steady salary' steady salary' (Stable motivational Plenty of job opportunities' plenty of job opportu	
		Reasons for attraction and selection into the profession (Stable motivational trait)	Reasons for socializing and adapting in the profession (Dynamic motivational state)

mission-driven organization. Findings from the discrete choice experiments and the qualitative inquiry revealed that overtime, salary, job impact, number of beneficiaries, frequency of contact with beneficiaries, autonomy, and job enjoyment simultaneously and independently affected professionals' job choices. Having more autonomy and more exposure to beneficiaries may be part of the anthropological sense making for nurses, who are socialized to focus on their personal and direct contact with patients and suffer under red tape and hierarchy. In a Western healthcare system, nurses might be pressured by work shifts, emotional stress, and strong interdependencies with a number of different healthcare workers and settings. They did not desire additional working hours, but rather seek less routine, more personalization of care, and direct professional satisfaction for the patients' sake. The opportunity to be publicly recognized, on the contrary, did not change the attractiveness of jobs. In fact, respondents tended to be in search of higher public recognition for the profession as a whole. Lastly, the number of subordinates turned out to be an irrelevant factor for nurses' preferences, because it reduces the intensity and frequency of relationships, but was a statistically significant attribute for nurses with managerial responsibilities, who considered it a core task of their role. Coordinating a smaller group of colleagues may be perceived as a realm in which subordinates can be more personally and directly influenced. Thus, perceptions of professional empowerment can be strengthened. Further analyses of the interplay among motivational factor showed that professionals were willing to trade off salary for a larger number of beneficiaries, more autonomy, a larger job impact, and less overtime.

This work also nurtures the debate about whether work motivation is a stable trait or a dynamic state (e.g., Christensen, Paarlberg, and Perry 2017; Wright and Grant 2010) in public mission-driven professions. Evidence from qualitative interviews suggests that the mix of extrinsic, prosocial, and intrinsic motives may change over the years in nursing professions (e.g., Belle 2013; Pedersen 2015).

We fully acknowledge that the results of our work should be interpreted in light of the usual limitations that apply to mixed-methods studies. On the one hand, randomized controlled trials are well suited for providing causal evidence of the effects that our manipulations had on nurses' preferences for jobs. On the other hand, however, the use of artificial scenarios detracts from both external and construct validity. As for the former, we have no evidence that the results we observed would extend beyond our discrete choice experiments to naturally occurring settings. As to construct validity, mono-operation bias and the use of arbitrary treatment levels are potentially concerning threats. Indeed, these limitations are inherent in discrete choice experiment designs, which require a series of judgment calls in the operationalization of attributes and identification of attribute-levels. Moreover, while exploring interactions among job attributes is relevant and timely, a dedicated research design and collection of data would be needed. As a matter of fact, Ryan and colleagues argue that 'It is common practice in the discrete choice experiment literature to include only main effects, since it is argued that such effects explain most of the variation in preferences (de Bekker-Grob, Ryan, and Gerard 2012)' (Ryan et al. 2012, 21). These limitations notwithstanding, discrete choice experiments have proven effective in predicting how individuals choose and behave in reality (e.g., de Bekker-Grob, Ryan, and Gerard 2012). Another limitation of our sequentialexplanatory mixed-methods design is the convenient nature and small size of the sample of professionals who participated in the qualitative inquiry. In light of those



limitations, which threaten the external validity of our findings, we cannot guarantee that the same themes that emerged from the interviews would have been observed in a random sample and/or a larger group of professionals.

That being said, our work has relevant implications for scholars and practitioners alike. Firstly, our findings may stretch beyond nursing and contribute to a broader stream of research into the work motivation of public sector professionals in crises or in transforming skill mixes. Indeed, healthcare workers can be considered the quintessence of public sector professionals, being a homogenous worker body, highly mission-driven, and constantly exposed to public value discourse. This study may inform research in other organizations that share with health institutions the same public nature, bureaucratic structure, degree of professionalization, and social impact on the general citizenry.

Secondly, the results of our investigation are especially timely in the context of Italian healthcare reforms that are being debated across public organizations and level of governments. On the one hand, the rapid growth of long-term care and chronic patients is changing the demand side of health service provision. On the other hand, the forecasted erosion in the number of medical doctors is threatening the future of the supply side of health service provision. Thus, collecting evidence-based information about the motivational forces that simultaneously and independently drive nurses' and nurse managers' work preferences and gaining a fine-grained understanding of the mechanisms behind choices will help to facilitate the design of appealing career paths to meet market expectations.

An additional implication of our studies is for scholarly debates in the broader human resource management literature about the role of public human resource management. Self-determination theory is a well-established framework for work motivation native to the field of applied psychology. Using self-determination theory to illuminate the motivational bases of public mission-driven organizations has the potential not only to establish a common ground between public management and the broader social sciences but also to add key nuances to the theoretical framework (Belle and Cantarelli 2018; Breaugh, Ritz, and Alfes 2017; Chen and Bozeman 2013). Lastly, our sequential-explanatory mixed-methods design (Mele and Belardinelli 2018) provides novel evidence to the nascent stream of public management research that triangulates experimental data with qualitative inquiries (Authors omitted).

Disclosure statement

No potential conflict of interest was reported by the authors.

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	EXTERNAL REGULATION	INTROJECTED — IDENTIFIED — INTEGRATED REGULATION	INTRINSIC REGULATION
NEED FOR AUTONOMY	OVERTIME UNPREDICTABLY THREATENS ONE'S FAMILY TIME (1 am happy to take planned breaks between shifts' Overtime should remain extraordinary rather than becoming routine' Overtime is annoying because it cannot be predicted?); IS DISCOURAGED BY THE ORGANIZATION ('Overtime does not lead to extra salary for nurse manages' 'My supervisor pays attention to avoiding overtime' 1 do not work overtime; I stay longer when helpful, I leave earlier when doable' 'Overtime is not allowed in my unit')		AUTONOMY ALLOWS SELF-ORGANIZING (1 wish I had more autonomy: my role would be more effective' Autonomy is the satisfaction of doing the profession that I love' 'More autonomy would give me more degrees of freedom')
NEED FOR COMPETENCE		MORE SALARY WOULD BE A RECOGNITION OF ONE'S EXPERIENCE, COMPETENCE, AND WORKING CONDITIONS (Working on national holidays is not rewarded financially. There is not significantly more salary when working on national days, but there should be?);	AUTONOMY IS A RECOGNITION OF ONE'S COMPETENCIES (") would like to have more autonomy based on the knowledge and skills that I have gained over the years in the field" Regional guidelines establish that midwives are autonomous in treating some typologies of pregnancy" Full autonomy during the execution of the test on the patient")

(Continued)

Appendix 1. (Continued).			
	EXTERNAL REGULATION	Introjected – Identified – Integrated regulation	INTRINSIC REGULATION
		STRENGTHEN EQUITY COMPARED TO THE STAKES AT PLAY	INTERESTING TASKS ALLOW ONE'S PERSONAL AND
		('Dealing with people and human life is a responsibility,	PROFESSIONAL GROWTH ('Bureaucratic procedures are
		so a bit higher salary would be appropriate' 'Given the	time wasting: for any newborn, about one hour is lost
		degree of autonomy and the responsibility that comes	on paperwork' 'Interesting tasks include designing more
		with it, a higher salary would make sense' The current	integrated services and doing research. Continuous
		salary is inadequate because of the job responsibilities	effort to maintain the number of staff, instead, is
		and the potential consequences') AND TO OTHER	burdensome' 'Boring tasks include managing shifts,
		PROFESSIONS (Teachers are paid as much as we are.	ordering tools, and buying drugs. Any clinical activity is
		Even though they have an impact, it is not life or death'	interesting' 'I like any caring activity. I do not like as
		'Middle managers should make as much as top	much dealing with patients' and accompanying
		managers because they must be as effective' 'Soccer	persons' complaints about long waiting times because l
		players earn much more money' 'Nurses often debate	am fully aware of our extra work effort' Feeling like the
		about their salary, which is too low, especially if	inspector watching subordinates is annoying because it
		compared with professionals who also hold university	tends to generate conflict. Solving and learning from
		positions')	unforeseen events is interesting' 'Performing routine
			tasks is extremely dangerous because the routine leads
			to overconfidence and hence to predictable and
			potentially harmful errors' 'Managing shifts is boring.
			System planning is interesting' 'Events that are difficult
			to solve are interesting because they make one learn
			and be better prepared the next time')
		Managing more Subordinates is a career	
		PROMOTION ('Managing more subordinates is a	
		challenge to one's self: one can test how much one's	
		managerial skills are real and understand how much	
		one's ideas and suggestions are doable' 'Managing more	
		subordinates is rewarding when it leads to tangible	
		service improvements' 'Managing more subordinates	
		provides the opportunity to share working procedures	
		more broadly so that we can provide better care and be	
		less stressed within the team' ' Managing more	
		subordinates is a recognition of one's improved skills in	
		coordinating and motivating people')	

(Continued)

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Appendix 1. (Continued).

volunteer associations – are also facilitated')

Appendix 1. (Continued).

NEED FOR

	EXTERNAL REGULATION	Introjected – Identified – Integrated regulation	INTRINSIC REGULATION
IR RELATEDNESS	MANAGING MORE SUBORDINATES ENTAILS STRIVING TO	anaging more subordinates entails striving to having many beneficiaries is rewarding as long autonomy allows facilitating others' work (†††)	AUTONOMY ALLOWS FACILITATING OTHERS' WORK ('1f1
	BALANCE CONFLICTING GOALS ('Leading change with a	AS THE NUMBER IS BEARABLE ('Relating to non-Italian	use my autonomy to plan procedures correctly, external
	limited number of colleagues clashes with the healthcare	speakers with very different cultures and habits is	stakeholders – such as firefighters, police forces, and

assign goals that the subordinate does not identify with' and anxiety when subordinates fail to join organizational RELATIONSHIPS ('Providing instructions is not enjoyable: Oftentimes I feel like I have not worked at all but I have approach: something that works with a subordinate may the ability to represent subordinates and limit the desire everybody's life and we spent the majority of our life at proposals' 'Planning working shifts so that everybody is burdensome task'); ENGAGING IN STRESSFUL PERSONAL be counterproductive with another' 'Supervisors have to those are usually very high' 'Supervisors need to master supervisor is the scapegoat, the punching ball of many' shifts so that the working hours allow a high standard subordinates follow instructions' 'It is a source of stress services that should be provided' 'Sometimes I have to these are not always well received and accepted' The reference point means that anybody comes to you for talk to very different people with very different needs' talked to many professionals the entire day' 'Being a personal hours simultaneously. Aiming at establishing subordinates' and unit's needs employing fair enough Planning shifts is a nightmare: It requires balancing out in the condition of contributing her/his best is a Meeting subordinates' expectations is tough because setting working hours is demanding' 'Shifts influence criteria and avoiding inequality' 'It is hard to make any issue anytime' There is not a one-size-fits-all to be on a pedestal'); AFFECTING SUBORDINATES' FAMILY TIME ('Affecting subordinates' life through work' 'Managing shifts is part of the working and for personal time for all is extremely difficult')

time'); EMPATHY AND CONFLICT DO NOT BECOME TOO difficult' 'I am satisfied when the number of patients that treat in one shift allows me to learn their names and look them in the eyes' 'When patients are too many, one cannot care for them as wished. When the work becomes STRESSFUL ('Sometimes I empathize too much; anything vatients' accompanying persons become aggressive' 'The contact with beneficiaries is a double-edged sword: it can be highly rewarding or demanding based on the context, agreement with subordinates' complaints that I cannot address' The contact with patients is rewarding when relationships based on mutual trust, but this requires that is not as it should be hurts me' 1 am concerned you perceive that you have relieved their conditions') expectations, which often are very high' 'Sometimes chaotic, direct care is threatened' 'I like establishing uncomfortable at times' 'I feel powerless when in which varies a lot' 'Our work is instrumental but about failing to meet colleagues' and patients' sometimes patients ask for a diagnosis. This is

Appendix 1. (Continued).			
	EXTERNAL REGULATION	Introjected – identified – integrated regulation	Intrinsic regulation
	VISIBILITY IS REWARDING ON A ONE-TO-ONE BASIS WITH	FREQUENT CONTACT WITH PATIENTS IS AT THE HEART OF	
	COLLEAGUES AND PATIENTS ('It is rewarding when you	THE PROFESSION (The core of our profession is relating	
	run into mums who remember that 'you were there	to patients: they mainly need you to listen to them');	
	when my daughter was born' and the daughter is now	WITH SUBORDINATES ENABLES A TIMELY AWARENESS	
	twenty' 'It is pleasant when patients call me by name	OF DYSFUNCTIONS ('When I listen to subordinates, I	
	and are thankful' 'It is nice when colleagues are happy	have a timely knowledge of anything that can be	
	that you are on the same shift' 'When you do many	improved')	
	small good things over time, you wish you had more		
	recognition from the top management' 'Receiving public		
	recognition is irrelevant to me, rather I prefer that		
	patients tell me that my smile and courtesy is useful to		
	them' 'It is not really necessary to feel fully satisfied'		
	'Individual public recognition is not important. I am sure		
	this is not the main reason to choose this profession'		
	'Sharing the correct information with the local media is		
	everything except easy' 'Individual public recognition		
	causes problems; keeping information under control is		
	neither easy nor fun'); STILL MISSING FOR THE IDENTITY		
	OF THE PROFESSION AS A WHOLE ('We need to promote		
	awareness of the content of our profession. People do		
	not know what we do' 'If one believes in the nursing		
	profession, (s)he should care about public recognition for		
	the profession as a whole' 'Oftentimes, our group of		
	professionals is confounded with volunteers')		