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Applying Self-Determination Theory to Understand Public Employee's Motivation for a Public Service Career: An East Asian Case (Taiwan)

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ABSTRACT

The research on employee motivation for choosing a public service career has largely been grounded in the intrinsic-extrinsic dichotomy along with limited motives such as job security, instrumental reward, and public service motivation (PSM). Such an approach narrows the view of researchers, especially those in cultures where major reasons for choosing a public service career exceed these factors and the intrinsic-extrinsic dichotomy. By employing self-determination theory (SDT) to examine data collected in Taiwan, an East Asian cultural setting, a measurement instrument is developed that captures five major motivations for a public service career. A discussion of applying this survey instrument for future research follows.

KEYWORDS

East Asia; motivation for a public service career; public service motivation (PSM); self-determination theory (SDT); Taiwan

Why do people choose to work as public servants? It is a crucial question as an understanding of initial motivations allows us to predict public servants' future work morale and performance (Chen & Bozeman, 2013). To answer this question, scholars in general choose a few human motives or needs such as job security, monetary reward, and serving people (often referred to as public service motivation, or PSM), and in many cases, sort out motives using the intrinsic-extrinsic dichotomy. Following this step, scholars associate motives with people's public sector choice/preference. A line of research focuses on incumbent public servants (Buelens & Van den Broeck, 2007; Bullock, Stritch, & Rainey, 2015; Jaskyte, 2014; Lyons, Duxbury, & Higgins, 2006), but this approach may be biased by socialization effects, such as sunk cost and "reality shock" from negative bureaucracy (Kjeldsen & Jacobsen, 2013), as well as self-persuasion (Giauque, Ritz, Varone, & Anderfuhren-Biget, 2012). Recently, a few scholars targeted university students (Christensen & Wright, 2011; Clerkin & Coggburn, 2012; Ko & Jun, 2015; Liu, Hui, Hu, Yang, & Yu, 2011; Rose, 2013; Winter & Thaler, 2016) and individuals who switched sectors (Bozeman & Ponomariov, 2009; Hansen, 2014). With minor exceptions, these studies generally support the view that a need for job security and PSM positively

determines the preference for a public service career, whereas the need for material rewards (e.g., high pay) drives people to choose the private sector. The findings also create a general impression that public employees, compared to their business sector peers, are less driven by material rewards and more by intrinsic rewards (Bright, 2009).

Undoubtedly, the aforementioned approach has broadened the knowledge base of the motivation for a public service career. Meanwhile, however, the intrinsic-extrinsic dichotomy along with limited sector selection motives constrain the view of researchers, especially those from cultures in which the major reasons for public-sector preference are left unexplored in the dichotomy. For example, in East Asian countries, such as China, Korea, and Taiwan, the entrance barrier for the public service system is very high,¹ in part due to people's long-term belief that serving as a government official can bring one's family privilege and prestige (Elman, 2013). As a result, parents often urge children to take the public service exam (Xu, 2016). In a society in which filial piety is enshrined as a pivotal social value (Ho, 1996; Yeh, 2003), expectations from East Asian parents play a major role in motivating their children to enter the public sector. However, expectations from parents cannot be neatly classified as either typical extrinsic motivation (material rewards) or intrinsic motivation, and have seldom been studied in the research on public sector preference.

To go beyond the traditional approach grounded in the intrinsic-extrinsic dichotomy, the present study employs self-determination theory (SDT) (Ryan & Deci, 2000) to develop a survey instrument that systematically captures various motivations for a public service career. SDT provides a comprehensive typology that embraces intrinsic, identified, instrumental, introjected, and external regulations. This typology has been widely applied in fields such as education, relationship studies, sports management, and labor relations (Blais, Sabourin, Boucher, & Vallerand, 1990; Gagné et al., 2010; Pelletier et al., 1995; Vallerand, Fortier, & Guay, 1997). SDT prevails not only because of its all-encompassing typology; it also provides the theoretical basis that explains the correlation between motivations (the crowding effect) and links motivations to attitudinal, perceptual, and behavioral correlates. Therefore, the present study also tests (1) how different motivations in the survey instrument are correlated with one another, and (2) how motivations are associated with employees' various public sector perceptions. The two tests also help us examine content validity as well as criterion validity of the survey instrument.

Owing to rapid growth and the unique cultural setting of East Asia, in recent years, scholars of generic management have started to call for a theory of Chinese management (Barney & Zhang, 2009; Tsui, 2006) and Asian management (Hofstede, 2007). As a result, we have chosen an East Asian case, Taiwan, for the present study. Located at the southeast corner of Mainland China, Taiwan uses Mandarin Chinese as the official language and has long

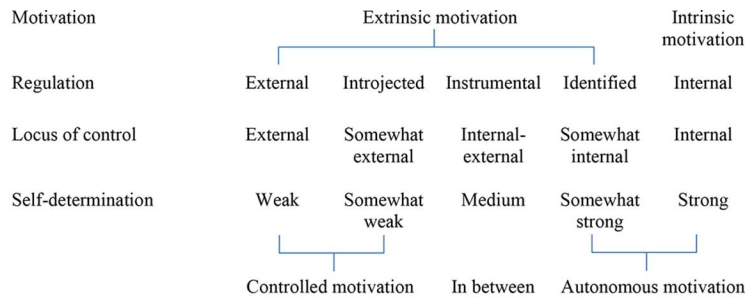
been considered a part of Chinese culture. Meanwhile, Taiwan employs a separation-of-power presidential system that is analogous to many Western democratic regimes. Critical challenges, such as accountability and bureaucrat bashing, are also similar to those experienced by many other democratic countries (Sun, 2008). This interesting mix makes Taiwan an ideal case for research on motivation for a public service career. Our sample consists of responses from newly hired public servants. Newly hired recruits in Taiwan are those who, at the time of the survey, had already passed the public service exam and were receiving onboard training. Surveying new public servants instead of incumbents eliminates response bias from socialization and self-persuasion resulting from long-term exposure to the public service work environment. It also allows researchers to track the change of motivations for a public service career in the long term.

This study has two major theoretical contributions. First, the developed measurement instrument offers a comprehensive, systematic, and theory-based view on motivations for a public service career. Second, the instrument, along with many newly discovered motives, serves as a powerful tool for cross-cultural comparison in the future. For example, scholars can examine whether the importance of parents' expectation differs across the cultures/countries in determining employees' choice to enter the public sector. Practitioners may also benefit from the findings. By interpreting descriptive statistics, public managers in Taiwan are well informed regarding the newly hired employees' motivational structure in selecting the public sector. By interpreting the correlation between each motivation and public sector perceptions, they know which motivation is more desired, and can better develop managerial strategies accordingly.

This article begins with a brief introduction of the motivational typology in SDT. A discussion of how cultural elements in East Asia may influence individual motivation in choosing a public service career is presented, followed by integration of these cultural elements into a SDT-based measurement instrument. Several studies that examined the validity of the instrument are placed analyzed. In conclusion, the theoretical and practical implications are elaborated and possible limitations of this study are noted.

The motivational typology in SDT

First proposed by Deci and Ryan (1985), SDT is thus far the most systematic motivation theory that offers a complete typology of motivation (Ryan & Deci, 2000). By improving the traditional intrinsic-extrinsic dichotomy, SDT suggests a continuous, spectral motivational typology (see Figure 1) that represents how individuals are regulated by various conditions. If we disregard amotivation (completely lacking motivation),² SDT embraces intrinsic motivation, identified regulation, introjected regulation, and external



Source: Ryan and Deci (2000) with minor revisions

Figure 1. Motivational typology in SDT.

regulation. Internal and identified regulations fall under the category of autonomous motivation, whereas introjected and external regulations fall under the category of controlled motivation. An additional mode of regulation, instrumental regulation, straddles both categories and represents characteristics from both categories. Five motivations accompany different levels of self-determination.

Intrinsic motivation (internal regulation)

On the right extreme of this spectrum is intrinsic motivation, meaning that the task is its own reward for individuals. For example, an intrinsically motivated student feels stimulation and satisfaction whenever she studies math, and the process of studying math is for her a reward in itself. Intrinsically motivated people thus consider themselves as initiators of their own behavior, select desired outcomes, and choose their own ways to achieve these goals (Deci & Ryan, 1987). They also demonstrate a strong internal locus of control (Spector, 1988), meaning that they are not only active causal makers, but are also in full control of their behavioral consequences. Intrinsic motivation leads to *internal regulation*, which brings individuals strong self-determination.

Identified regulation

We use studying math as an example in the following demonstrations. Studying math may not be internally rewarding to everyone, and many people study math due to reasons external to the individuals. SDT identifies various extrinsic motivations. On the left extreme of intrinsic motivation is identified regulation.³ Identified regulation means that people accept regulation because the activity is judged as being valuable, useful, and in line with their value system. For example, a student chooses greater exertion in studying math than music because she wants to become a scientist or an engineer in the future, and math is identified as something valuable for her future career. In this case,

individuals perform the activity with a sense of choice, and demonstrate a fairly strong internal locus of control as well as self-determination.

Introjected regulation

Different from identified regulation, some extrinsic motivators do not grant individuals a sense of autonomy, and are thus called controlled motivation. The first type is introjected regulation, just to the left of identified regulation in the SDT spectrum. People who fall into this category perform an action in order to avoid anxiety, shame, and pressure (Vallerand & Ratelle, 2004). For example, a student chooses to apply himself to studying math not because math is interesting or valuable, but because he feels shameful and anxious if he performs worse than his classmates do. In this situation, their self-determination is weak, because regulation by shame and anxiety is not well valued by individuals (Baard, 1994). Individuals who display strong introjected regulation also exhibit an external locus of control, which means that they are not sure whether their effort will eventually succeed.

External regulation

Feelings of anxiety and shame are self-created. When others impose pressure, external regulation, the second type of controlled motivation just to the left of introjected regulation, can appear. External regulation means that people behave to satisfy an external demand, such as avoiding physical punishment as a forced decision or obtaining an external reward contingency (Vallerand & Ratelle, 2004). More precisely, the activity is forced by an external power. For example, a student chooses to make a serious effort in studying math because his math teacher punishes him if he performs poorly or his parents monetarily reward him if he performs well. Therefore, the locus of control is strongly external, meaning that individuals do not believe they can control the causality of their actions. Self-determination, not surprisingly, is the weakest compared to other regulatory styles mentioned earlier (Ryan & Deci, 2000).

Instrumental regulation

In recent years, scholars have started to notice that human motivation sometimes falls into a gray area between autonomous motivation and controlled motivation. When studying reasons for accepting temporary employment, De Cuyper and De Witte (2008) find that in many cases, individual motivation is both a free/autonomous choice and a forced/controlled choice. For example, many people accept temporary employment because it is a stepping stone that helps them attain a certain goal, such as learning new skills and, accordingly, gaining permanent employment (Tan & Tan,

2002). Although temporary employment serves as an instrument for an identified value, the choice itself is controlled by external conditions (Von Hippel, Mangum, Greenberger, Heneman, & Skoglund, 1997). As De Cuyper and De Witte (2008) indicate, instrumental regulation portrays two extremes simultaneously, while also acknowledging possible combinations of perceived autonomy and control, and it refers to a reluctant choice that helps employees attain a more valuable goal.

Motivations for a public service career in East Asia: Through the lens of SDT

A comprehensive view on motivations for a public service career in an East Asian setting comprises two parts. First, findings in existing literature, especially those related to PSM and job security, can be applied to an East Asian context, where public sector jobs also provide opportunities for public service and are subject to merit protection. This part makes up internal, identified, and instrumental regulations in SDT. Second, East Asian cultures create unique social norms and institutions that extrinsically motivate young generations to choose the public sector. Parents' expectation and children's strong sense of filial piety, as mentioned, are prime examples. This part constitutes both introjected and external regulations in SDT. We elaborate on the two parts separately.

Part I: Findings in the existing literature

Often deemed a form of autonomous motive (Andrews, 2016; Vandenabeele, 2007) and mainly grounded in public institutions (Perry & Wise, 1990), PSM captures an individual's prosocial/altruistic tendency and is related to public sector selection (Ritz, Brewer, & Neumann, 2016). In this regard, although conceptually different from PSM, two autonomous motivations for a public service career, both intrinsic motivation and identified regulation, should still adequately address the prosocial and altruistic essence in PSM.

Intrinsic motivation concerns the internal reward when individuals take actions. Intrinsic motivation for a public service career, accordingly, refers to happiness and feelings of internal satisfaction when public employees engage in work that directly or indirectly impacts people. It may also be a feeling that serving is a blissful task (Houston, 2006) or just a calling (Frederickson, 1997). In the present study, respondents were asked, "Regarding your choice of work as a public servant, to what extent do the following factors influence your choice?", and measure the levels of intrinsic motivation using the following items:

- Serving people is a source of my happiness.
- Serving people is a calling, and I do it without an external reason.

- The internal satisfaction derived from helping others is just indescribable.

On the other hand, different from intrinsic motivation that emphasizes internal reward, identified regulation stresses that individuals perceive public service to be a valuable activity. For example, in the PSM literature, obligation to the country and desire for power to make important policies (Kim, 2009) are typical examples of identified regulation for a public service career. In many cases, employees choose a public service career because the public sector is deemed a place where they can make a difference with their potential (Lyons et al., 2006). Identified regulation also refers to individuals taking an action that is congruent with their belief system. Scholars have used “doing altruistic work that is consistent with one’s own values” to capture the altruism embedded in public service (Lyons et al., 2006; Mann, 2006). Therefore, we use the following items to capture identified regulation for a public service career:

- Public service work allows me to demonstrate my potential.
- My moral value is consistent with what public service pursues.
- I feel obligated to my country.
- I will have power to make key policies that shape the society.

In addition to the chance to serve the public interest, job security is the most commonly cited reason when individuals are asked why they chose a public sector job. In this study, instead of regarding job security as a type of external regulation (i.e., external reward) for a public service career, we treat it as a type of instrumental regulation.⁴ Similar to the aforementioned case of temporary employment, job security cannot be controlled internally. However, a high level of job security can protect against the harsh consequences of challenging the authority, which is especially pertinent when employees have to deal with superiors who issue destructive orders (Chen, Berman, & Wang, 2017). In this regard, job security as a type of externally controlled condition serves as an instrument for other identified values in public service, including making a difference to the society (Chen & Hsieh, 2015). Along with job security and merit protection, reasonable pay and benefits, such as pension plans in public service, form an even more concrete protection for public servants. Therefore, we use the following items to capture instrumental regulation:

- The career is quite stable.
- I don’t fear losing the job.
- Benefits and pay are quite reasonable.

Part II: Culturally specific elements in East Asia

Unique development and cultural norms in East Asia constitute introjected and external regulations for a public service career. To understand how these norms are formed, we begin with a short introduction addressing East Asian attitudes toward a public service job.

The entrance barrier for the public service system is very high in East Asian countries such as Mainland China, Korea, and Taiwan as a public service position is much more desired in East Asia than in the West. This tradition can be traced back to Keju,⁵ the first centralized public service exam in the world (Kracke, 1947). Keju was officially introduced in 605 A.D. in China as a way to attract competent candidates to work for the government. This system soon spread to other East Asian countries. However, it was later interpreted by citizens as a way to enhance social status: as the success of Keju accompanied many substantial rewards such as wealth, power, and privilege (e.g., a common Chinese saying: “a golden house is hidden in books”), in cases where government suppression and biased treatment had harmed their family, people hoped to succeed in Keju and gain power and privilege such that they could protect their family (Lee, 2003; Wang, 2007).

Further, because those who succeeded in Keju were considered more knowledgeable and culturally advanced (Wang, 2007), an “official-centered culture” emerged. In such a culture, public officials were highly respected and honored, and citizens called a government official “the honorable big man” and relied on an official to mediate conflicts. The relationship between public officials and citizens was an extension of paternalistic leadership (Cheng, Chou, Wu, Huang, & Farh, 2004) and often depicted as parents (public officials), especially the father figures, taking care of and making decisions on behalf of the children (citizens). Therefore, in a traditional East Asian view, serving in the government signifies the greatest honor to the family clan and it glorifies the family name (Elman, 2013). Such thinking is still pervasive today, especially in small towns where people’s socioeconomic status is not very high.

The cult of attaining a public service position has resulted in social pressures that create introjected regulation for a public service career. First of all, many young people may take the public service exam mainly because parents (and sometimes senior relatives) want them to do so. Parents’ expectation can greatly influence children’s job choice in East Asian societies due to the long tradition of filial piety. Filial piety, one of the core Confucian values, began as an expectation to be affectionate toward the parents and to treat them honorably. Later, filial piety acquired authoritarian characteristics in the Han dynasty, and since, filial piety implies self-oppression, the sacrifice of one’s own wishes and compliance with parents’ wishes due to their seniority (Yeh, 2003). Modernization has not eradicated the tradition of filial piety, although the practices of filial piety have been changing during the years (Sung, 1999).

Second, some people take the public service exam not because of parental expectation but due to pressure from peers. Another critical component in the classic East Asian culture is collectivism (Hui, Triandis, & Yee, 1991), a culture understood as people being interdependent within in-groups (e.g., family, nation, tribe, etc.). In this culture, group insiders are greatly concerned

about interpersonal relationships. In order to maintain amiable personal relationships and group cohesion, they shape their behaviors according to group norms and behave in a communal way (Triandis, 2001). People living in this culture are likely to choose a public service career because friends are working in the government and doing well.

Finally, the sunk cost for exam preparation matters. The pass rate of the public service entrance exam remains extremely low today, and thus public service aspirants are commonly expected to invest considerable effort into preparing for the exams. According to our data, only 29% of the respondents had a full-time job during preparation; 79% studied at a private tuition institute tailored to cater to people preparing for public service exams; over 50% tried at least three times/years before passing the exam. In addition, an opportunity cost is also incurred, and the time invested into preparing for the exams comes at the expense of other opportunities for self-improvement and other job offers. The longer the time individuals invest in exam preparation, the more unlikely they are to select nonpublic service jobs. Therefore, according to the aforementioned analyses, we measure introjected regulation for a public service career using three items:

- My parents and relatives want me to be a public servant. I don't want to let them down.
- Many friends are working as public servants. I feel that I should try the same thing.
- I have invested too much in public service exam preparation. It is very unwise to turn down the opportunity to work as a public servant.

In recent years, especially in big cities where people experience more rapid modernization, the fanaticism of a public service career is gradually fading due to both economic and political reasons. Economically, according to the statistics of the IMD World Competitiveness Ranking and the World Economic Forum (WEF) Global Competitive Report in 2016, East Asian countries performed quite well: Mainland China ranked 25th and 28th respectively, Korea ranked 29th and 26th respectively, and Taiwan, where we collected data for the present study, ranked 14th in both reports.⁶ The results imply an energetic private sector that boasts many attractive private sector jobs in recent decades. Particularly in Taiwan, statistics show that although the salary at the entry level is slightly higher for government jobs, senior managers earn much more in the private sector.⁷ Politically, as a result of democratization and a global trend of bureaucratic bashing (Butler, Finniear, & Hill, 2011), the decline of trust in government and public officials has started to appear across the borders (Kim, 2010; Li, 2011), which further reduces the attractiveness of government jobs. A modern Chinese saying, “enterprises are for top people, whereas governments are for the inferiors,” shows that joining enterprises has become a top priority for some young people and public service jobs are less appealing today.

This new emerging social atmosphere creates external regulation for a public service career. More precisely, some young people may much more desire a successful career in the business sector than in the public sector. However, after being exposed to some business training or a job in the private sector, they either fail in those jobs or cannot deal with the high level of competition. Eventually, they are forced to choose a job in the public sector (Chen & Bozeman, 2013), where, in spite of the high barrier of entry, market competition is absent. Another type of external regulation is related to the “exam society” in East Asia (Zheng, 2007). After 1,300 years of living with Keju and the social mobility it brought, East Asians, especially Chinese, have developed a profound faith in the institution of examination, perceiving it to be the royal road to honors (Macgowan, 1912, p. 76) and defining success narrowly within the realm of exams (Yen, 2014). Such thinking is well reflected in a Chinese saying: “the worth of other pursuits is small, and the study of books excels them all.” As a result, many college students are book-smart and good at taking exams, but they have seldom been encouraged to know what they like and of what they are capable. Facing job selection, these people may feel compelled to take the public service exam, as they perceive themselves to be lacking skills in other aspects. Based on the literature review, we use the following items to capture external regulation for a public service career:

- I can’t face a competitive environment. Public service work is probably a better fit.

Table 1. The 16-item measurement instrument.

Question: Regarding your choice of working as a public servant, to what extent do the following factors influence your choice?
Internal regulation (intrinsic motivation)
<ul style="list-style-type: none">• IM1: Serving people is a source of my happiness.• IM2: Serving people is a calling, and I do it without an external reason.• IM3: The internal satisfaction derived from helping others is just indescribable.
Identified regulation
<ul style="list-style-type: none">• IDEN1: The public sector is a place where I can make a difference with my potential.• IDEN2: My moral value is consistent with what public service pursues.• IDEN3: I will have power to make key policies that shape the society.• IDEN4: I feel obligated to my country.
Instrumental regulation
<ul style="list-style-type: none">• INST1: Benefits and pay are quite reasonable.• INST2: The career is quite stable.• INST3: I don’t fear losing the job.
Introjected regulation
<ul style="list-style-type: none">• INTRO1: My parents and relatives want me to be a public servant. I don’t want to let them down.• INTRO2: Many friends are working as a public servant. I feel that I should try the same thing.• INTRO3: I have invested too much on public service exam preparation. It is very unwise to turn down the opportunity to work as a public servant.
External regulation
<ul style="list-style-type: none">• EXT1: I can’t face a competitive environment. Public service work is probably a better fit.• EXT2: I did something else but didn’t do well. I guess being a public servant could be easier.• EXT3: I lack special skills or interests, so I came to take the public service exam.

- I did something else but didn't do well. I guess being a public servant could be easier.
- I lack special skills or interests, so I came to take the public service exam.

The 16-item, SDT-based survey instrument found in [Table 1](#) measures public employees' motivations for a public service career. Multiple tests will be employed to examine the validity of this instrument in the following sections.

Data and variables

Data were collected in Taiwan. Taiwan government uses a 14-grade public service system, in which Grades 1–5 constitute the lowest tier, Grades 6–9 constitute the middle tier, and Grades 10–14 constitute the highest tier. College graduates in general start with Grade 6, the lowest of the middle tier. As mentioned, to become a public servant, candidates must first pass a competitive national public service exam. After passing the exam, successful candidates need to receive on-the-job public service training for five weeks before they can commence work as qualified public servants. Data were collected from new recruits during onboard training.

Public service training was held across the state in the north, middle, and south of Taiwan between November 2013 and April 2014, in a total of four waves and 74 training units (classes). The sample covered all three regions and four waves to be in line with stratified sampling. Questionnaires were delivered in person on the first day of training in each wave, and it was ensured that every attendant in the class received the questionnaire. To maximize the sample size with limited budget, the most populated training units in each region were chosen. In total, 56 of 74 training units were surveyed, and the response rate was as high as 99%. A high response rate should not be surprising in cases when questionnaires were delivered to everyone at the beginning of a class session and collected at the end of the same class session. After excluding invalid response sheets, the sample size available for analysis was $n = 1,980$. The survey assessed 12 of 18 classes in the first wave, 21 of 29 classes in the second wave, 19 of 23 classes in the third wave, and 4 of 4 classes in the fourth wave. The χ^2 value of 0.69 ($p < 0.95$) implies that the sample quite reflected the true population.⁸ In total, 562 responses were obtained from the first wave, 832 responses from the second wave, 459 responses from the third wave, and 127 responses from the fourth wave. The survey assessed 25 of 35 units in the north, 21 of 27 units in the middle, and 10 of 12 units in the south. The χ^2 value of 0.19 ($p < 0.66$) implies that the sample quite reflects the true population. In total, 1,027 responses were obtained from the north, 725 responses from the middle, and 238 responses from the south. Thus, in terms of waves and training units/regions, the sample is representative of the population.

Likert-scale items (from 1 = strongly disagree to 6 = strongly agree) are employed to measure motivations for public service in Table 1. The question used to solicit opinions is “Regarding your choice of working as a public servant, to what extent do the following factors influence your choice?” To examine criterion validity, four additional items of perceived negative image of the public sector were included. They address typical public sector problems, such as public servants’ unwillingness to make a change, a lack of competitiveness originating from job protection, work overload due to increasing citizen demands, and implementing a policy against a public servant’s beliefs as a result of hierarchical control and multiple value conflicts (Rainey, 2009).

Analyses: Multiple validity and reliability tests

Scholars have suggested the following basic validity and reliability tests for newly developed SDT-based measurement instruments (Gagné et al., 2015; Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2009): (1) confirmatory factor analysis (CFA) for discriminant validity, (2) Cronbach’s α for internal consistency (reliability) of each motivational category, and (3) Pearson’s correlation for content validity. In addition, there are some advanced tests for criterion validity, such as (4) linking individual motivation to perceptual or attitudinal outcomes, and (5) linking the self-determination index (SDI) to perceptual and attitudinal outcomes for criterion validity. In the present study, all these tests were conducted.

Validity test (I): Confirmatory factor analysis for discriminant validity

Confirmatory factor analysis provides an even more stringent test of the underlying structure of a survey instrument than do other approaches (Tremblay et al., 2009). CFA renders a satisfactory fit of the five-factor model (see Figure 2 for the final model): $\chi^2 = 1095.289$ ($df = 94$, $p < 0.01$), comparative fit index (CFI) = 0.923, Tucker-Lewis index (TLI) = 0.901, and root-mean-squared error of approximation (RMSEA) = 0.074 (90% confidence interval of RMSEA = 0.070, 0.078). The standardized item-factor loadings are over 0.5 (ranging between 0.53 and 0.87). The values of nonstandardized factorial covariance range from $\text{cov}(\text{IDEN}, \text{INTRO}) = -0.01$ to $\text{cov}(\text{INTRO}, \text{EXT}) = 0.37$. The standardized covariance values range from $\text{cov}(\text{IDEN}, \text{EXT}) = -0.19$ to $\text{cov}(\text{IM}, \text{IDEN}) = 0.66$. This indicates that the five latent variables are distinct, the first indication of construct validity.

Validity test (II): Cronbach’s α for internal consistency

According to the results of CFA, the five motivational dimensions in the developed survey instrument are both conceptually and statistically

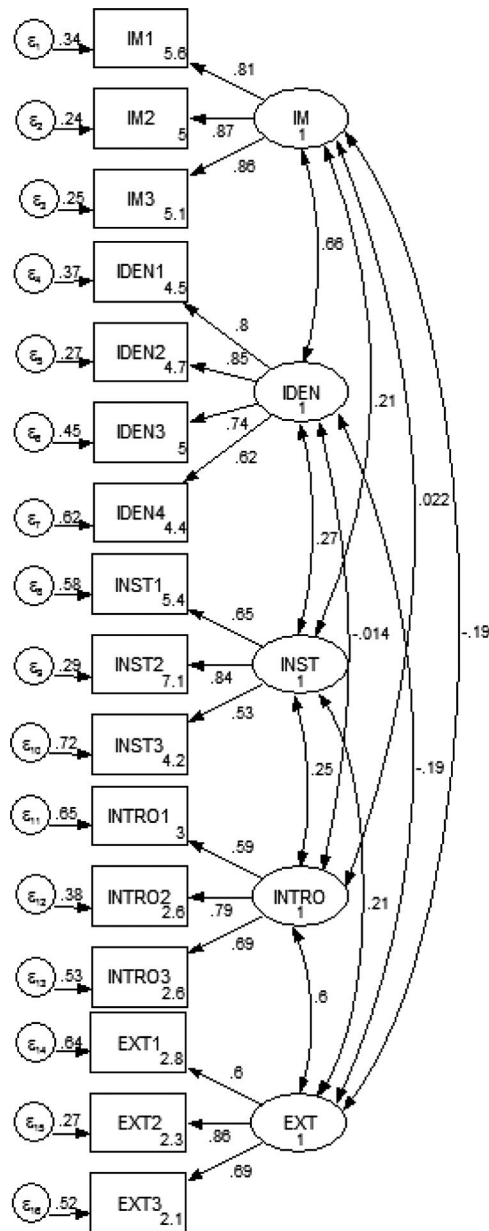


Figure 2. Results of confirmatory factor analysis.

distinctive. To assess further the internal consistency of each of the five subscales, Cronbach's α was calculated, with values ranging between 0.72 and 0.89, as shown in Table 2 (IM = 0.89; IDEN = 0.83; INST = 0.75; INTRO = 0.72; EXT = 0.74). As there are only three to four items in each subscale, the results demonstrate fairly adequate internal consistency. Results also show that instrumental regulation, among others, is the most decisive motivation for a public service career ($M = 4.82$). Moreover, the two

Table 2. Descriptive statistics.

	No. of items	α	M	SD	Min	Max
Intrinsic motivation (IM)	3	0.89	4.52	0.78	1	6
Identified regulation (IDEN)	4	0.83	4.36	0.77	1	6
Instrumental regulation (INST)	3	0.75	4.82	0.70	1	6
Introjected regulation (INTRO)	3	0.72	3.61	1.06	1	6
External regulation (EXT)	3	0.74	3.08	1.03	1	6

autonomous motivations ($M = 4.52$ and 4.36 , respectively) are stronger than the two controlled motivations ($M = 3.61$ and 3.08 , respectively).

Validity test (III): Correlation for content validity

To understand whether a SDT-based survey instrument successfully captures the content of five motivations, scholars suggest the test of the self-determination continuum (Ryan & Connell, 1989; Tremblay et al., 2009). More precisely, motivations in an SDT-based instrument should display the following patterns of correlations (Gagné et al., 2015). First, two autonomous motivations are positively correlated, and two controlled motivations are positively correlated as well. Second, the correlation between an autonomous motivation and a controlled motivation is either zero or negative. The only empirical study on instrumental regulation indicates that it is positively related to controlled motivation but negatively related to autonomous motivation (De Cuyper & De Witte, 2008), although further evidence is required. Finally, correlation coefficients between two adjacent motivations are more positive than coefficients of two distant motivations. For example, intrinsic-identified correlation should be more positive than intrinsic-instrumental or intrinsic-introjected correlation, and external-introjected correlation should be more positive than external-instrumental or external-identified correlation. Readers are referred to Table 3 for the results of covariance from CFA (covariance of standardized variables equal correlation).

First, the results show that correlations between two autonomous (intrinsic-identified) and two controlled (introjected-external) motivations are both strong and positive (0.60 and 0.66, respectively). Second, all autonomous-controlled correlations, namely, intrinsic-introjected (0.02),

Table 3. Correlation matrix.

	(1)	(2)	(3)	(4)	(5)
(1) Intrinsic motivation (IM)	1.00				
(2) Identified regulation (IDEN)	<u>0.66</u>	1.00			
(3) Instrumental regulation (INST)	<u>0.21</u>	<u>0.27</u>	1.00		
(4) Introjected regulation (INTRO)	0.02	−0.01	<u>0.25</u>	1.00	
(5) External regulation (EXT)	<u>−0.19</u>	<u>−0.19</u>	<u>0.21</u>	<u>0.60</u>	1.00

Note: Underlined coefficients: $p < 0.001$.

identified-introjected (-0.01), intrinsic-external (-0.19), and identified-external (-0.19) correlations are either negative or close to zero. Finally, adjacent correlations are more positive than distant correlations. For example, intrinsic-identified (0.66) is more positive than intrinsic-instrumental (0.21) correlation, intrinsic-instrumental (0.21) is more positive than intrinsic-introjected (0.02) correlation, and intrinsic-introjected (0.02) is more positive than intrinsic-external (-0.19) correlation. Findings show adequate self-determination continuum.

It is worth mentioning that instrumental regulation has positive and statistically significant correlations with all other motivations (0.21 , 0.27 , 0.25 , and 0.21 for intrinsic motivation, identified regulation, introjected regulation, and external regulation, respectively). This unique pattern suggests that instrumental regulation has features of both autonomous and controlled motivations, and it exists in between the two motivational categories in the SDT spectrum.

Validity test (IV): Linking motivations to employee perceptions for criterion validity

Criterion validity concerns the correlation between instrument and outcome variables. For example, scholars who study SDT-based work motivation often associate motivational items with work attitudes such as job satisfaction and organizational commitment (Gagné et al., 2010; Tremblay et al., 2009). Motivations in a SDT-based instrument should conform to the following predictive pattern: intrinsic motivation, identified regulation, instrumental regulation, introjected regulation, and external regulation are correlated with individual perceptions, attitudes, or behaviors in a spectral manner with results ranging from strongly positive to strongly negative. For example, in a study of couple relationships, Blais et al. (1990) find that while internal and identified regulations both foster dyadic adjustment, positive comparison, and marital happiness, internal regulation has a greater impact than has identified regulation. Conversely, introjected and external regulations both undermine these positive behaviors and perceptions, and external regulation has a greater impact than has introjected regulation. Regarding instrumental regulation, based on limited studies, its correlation with attitudes (e.g., satisfaction with wage) and behaviors (e.g., organizational citizenship behavior) is positive (Moorman & Harland, 2002; Van Dyne & Ang, 1998).

In the present study, it is not feasible to measure work attitudes (e.g., job satisfaction, job involvement, and organizational commitment) or behaviors (e.g., organizational citizenship behavior and working hours), because the candidates are newly employed. Thus, a factor must be considered that can be measured before one officially starts working: the perception of the public sector. Of particular interest are negative perceptions in conventional wisdom, such as a lack of competitiveness due to merit protection, heavy workload due

to demands from citizens, a conflicting environment, and risk aversion (Rainey, 2009).

Pearson's correlation is employed to examine how each motivation is correlated with the perceived negative images of the public sector.⁹ As Table 4 shows, in most cases, these perceptions are negatively correlated with intrinsic motivation and identified regulation, two autonomous motivations. On the other hand, these perceptions are negatively correlated with instrumental regulation and two controlled motivations. By looking at the last row (the sum values), we find a spectral pattern that arranges correlations from strongly positive to strongly negative, although the coefficient of identified regulation (−0.14) is slightly more negative than that of intrinsic motivation (−0.09). The findings show fairly adequate criterion validity.

Validity test (V): Linking SDI to employee perceptions for criterion validity

Individuals are not likely to choose a public service career due to merely one reason; often, the decision is impelled by the interplay of a variety of reasons. For example, they may choose the public sector because they care about the opportunity to make a difference (identified regulation) and also because their parents ask them to do so (introjected regulation). To understand how various motivations generate a synergetic force that motivates individuals to take actions, scholars suggest the use of the self-determination index (Ryan & Connell, 1989). To create a self-determination index (SDI), a different weight is allocated to each motivational dimension, with autonomous motivations having positive weights and nonautonomous motivations having negative weights (Chen & Bozeman, 2013). For example, intrinsic motivation carries

Table 4. Correlations: Linking motivations and SDI to public sector perceptions.

	<i>External regulation</i>	<i>Introjected regulation</i>	<i>Instrumental regulation</i>	<i>Identified regulation</i>	<i>Intrinsic motivation</i>	<i>Self- determination index (SDI)</i>
1. Merit protection reduces the public sector's competitiveness.	<u>0.12</u>	<u>0.11</u>	0.07	−0.04	0.00	− <u>0.11</u>
2. Citizens expect too much, so the workload in the public sector is very heavy.	<u>0.21</u>	<u>0.17</u>	<u>0.09</u>	− <u>0.13</u>	− <u>0.15</u>	− <u>0.26</u>
3. Public servants are often forced to implement policies against their values and beliefs.	<u>0.18</u>	<u>0.13</u>	<u>0.09</u>	− <u>0.17</u>	− <u>0.13</u>	− <u>0.22</u>
4. Government employees are too conservative, passive, and unwilling to take risk to make a positive change.	<u>0.12</u>	<u>0.14</u>	0.06	− <u>0.09</u>	−0.01	− <u>0.13</u>
1 + 2 + 3 + 4	<u>0.21</u>	<u>0.19</u>	<u>0.11</u>	− <u>0.14</u>	− <u>0.09</u>	− <u>0.25</u>

Note: Underlined coefficients: $p < .001$.

the value of +2, identified motivation +1, instrumental regulation 0, introjected motivation -1, and external motivation -2, corresponding to their different levels of self-determination. SDI can be obtained using the following equation: $SDI = 2 \times \text{Intrinsic} + 1 \times \text{Identified} + 0 \times \text{Instrumental} - 1 \times \text{Introjected} - 2 \times \text{External}$.¹⁰ In work motivation studies, SDI has been used to predict work attitudes such as job satisfaction, so researchers also use SDI to test criterion validity (Tremblay et al., 2009). In the present study, as shown in Table 4, SDI is significantly correlated with public-sector perceptions. The negative sign of coefficients is reasonable, as perceptions of the public sector are stated in a negative manner. This finding, again, demonstrates adequate criterion validity.

Conclusion

In sum, the major contribution of the present study is the development of a SDT-based measurement instrument that captures different motivations for a public service career. Prior research in general focused on the intrinsic-extrinsic dichotomy as well as limited motives such as PSM and job security. This approach has provided researchers with a basic understanding of public sector choice, but also has omitted multiple possible motivations, especially those rooted in specific cultural norms. SDT goes beyond the intrinsic-extrinsic dichotomy and offers a comprehensive motivational typology that considers various types of extrinsic motivation. Based on current findings, some future research directions and practical implications for researchers and practitioners, respectively, present themselves.

Future research directions

Examining an East Asian case, Taiwan, allowed incorporating general motivations (e.g., prosocial motivation and job security) with culturally specific motivations (e.g., parental expectation and peer pressure) in a SDT framework. Results of various validity and reliability tests using data collected in Taiwan confirm that the five motivational styles are distinctive, and the design of this measurement instrument is adequate. The applicability of this instrument, however, is not limited to Taiwan. It can be readily used in Mainland China, Korea, and other Asian nations that share a similar cultural and developmental heritage, including a low pass rate at the public service exam, parents' expectation, peer pressure, and a competitive private sector.

Of course, not only countries with similar cultural heritage are encouraged to use this instrument. In recent years, international comparison has become a trend in public administration research. Scholars survey public employees in various countries with the same set of questions and compare results across the borders (Berman et al., 2013). Scholars from culturally distant places such as North America, South America, Europe, and South Asia can also utilize this

instrument. A comparative perspective provides clearer differentiation between cultural factors and universal factors. In addition to a comparative approach, scholars may also consider developing their own subscales of introjected regulation and external regulation, two types of controlled motivation, based on the unique context in their country. As mentioned, norms grounded in cultures are likely to form an external force that motivates individuals to choose a public service career.

Finally, by surveying new recruits in the present study, response bias from organizational socialization was reduced. At the same time, however, the generalizability of the findings was limited and sacrificed the chance to link employee motivation to work attitudes, effort, and performance. As a result, a direction that future researchers could consider is in surveying incumbent public employees, and associating their job selection motivations to more attitudinal and behavioral outcomes. In addressing this relationship, scholars should also take into account moderating factors such as the change of motivation over time or environmental shaping in organizations.

Practical implications

Descriptive statistics in [Table 2](#) show two critical points that require practitioners' attention. First, compared to autonomous motivations ($M = 4.52$ and 4.36 , respectively), instrumental regulation is even more powerful in determining the candidate's attempt to work as a public servant ($M = 4.82$). However, instrumental regulation may lead to negative perceptions of the public sector. Is this a warning sign? Should public managers be worried that new public employees are overly concerned about a stable career? The answer is not yet conclusive. Earlier evidence shows that a desire for job security is not entirely bad. It is positively related to employees' willingness to champion policy alternatives (Chen et al., 2017). The presence of both positive and negative outcomes at the same time implies that instrumental regulation exists between autonomous motivation and controlled motivation, and it is coupled with a forced choice as well as an identified value simultaneously. Selecting the public sector for job security may signify employees' passive attitudes on one hand, but job security also allows employees to speak the truth to authority without fear (Bowman, 2002), guard employees against destructive orders, and eventually it ensures that they can pursue higher-level goals (e.g., serving people).

Second, although intrinsic motivation and identified regulation are fairly strong, introjected regulation and external regulation still play a moderate role ($M = 3.61$ and 3.08 , respectively). Therefore, it is imperative that public managers help employees maintain high autonomous motivations and reduce their controlled motivations. The most important psychological needs in SDT—namely autonomy, competence, and relatedness (Ryan

& Deci, 2000)—can provide some managerial hints. According to SDT, individuals are able to move away from controlled motivation and eventually identify the value of an activity or even enjoy the activity if they perceive that their most important needs are met (Deci et al., 2001; Gagné, Ryan, & Bargmann, 2003). The process of motivational change is called internalization. In a public service context, need satisfaction for autonomy, competence, and relatedness are related to various public management themes.

Perceived autonomy is the sense of choice and psychological freedom when carrying out an activity (Van den Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010). Characteristics of the public sector, such as red tape and hierarchical control, can impose control on public servants, reduce their perceived autonomy, and accordingly undermine their autonomous motivation and increase their controlled motivation (Belle, 2015; Moynihan & Pandey, 2007; Weibel, Rost, & Osterloh, 2010). Perceived competence is the feeling of being effective in interacting with the environment (Van den Broeck et al., 2010). Perceived competence can be nurtured through job enrichment, mentoring, formal training, and adequate reward. For example, training equips employees with necessary knowledge, skills, and visions in handling problems, and, accordingly, enhances their perceived self-efficacy and competence (Warr, Allan, & Birdi, 1999). Perceived relatedness is the feeling of being connected with important others, such as colleagues (Van den Broeck et al., 2010). In modern literature of organizational behavior, organizational citizenship behavior is strongly encouraged, but it may be undermined by contingent performance-based payment (Deckop, Mangel, & Cirka, 1999). Is performance-based pay really desirable? Public managers may need more thorough consideration.

Research limitations

Similar to prior research that developed the SDT-based survey instrument, the present study has the following limitations. First, self-report cross-sectional data may suffer from common method variance issues, leading to spurious relationships between motivation and public-sector perceptions. A longitudinal study that allows data collection at two stages should be employed in the future to improve the quality of data (Gagné et al., 2010). A related limitation is the issue of social desirability. For example, some public employees may not want to admit that they chose a public service career because parents force them to do so. Although recently, scholars have argued that the issue of social desirability is not as serious as previously believed (Grimm, 2010), the possibility cannot be excluded in the present study. To deal with this issue, college students were selected to be survey administrators. As college students and newly hired public employees belong to similar social groups (students are slightly younger), socially desirable answers can be mitigated (Nederhof,

1985). In addition, after explaining the purpose of the survey, administrators were asked to leave the classroom so that respondents could finish the questionnaire in an isolated environment. This method may also reduce social desirability (Nederhof, 1985). In sum, the present study is merely the start of many incremental improvements. More research is needed to utilize this survey instrument or to refine it.

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Notes

1. In Mainland China, the average rate in passing the public service exam at the central government level in 2015 was 1.90% (<http://news.ftv.com.tw/NewsContent.aspx?ntype=class&sno=2015B29I04M1>). In Korea, the average rate in 2005 was 81 applicants competing for one position, according to Kim (2009). In Taiwan, where we collected data for the present study, the exam is less competitive, but the passing rate is still low: the rate for the C3-Level Public Service Exam (open to college graduates and above) was 7.51% in 2013, 8.46% in 2014, and 9.78% in 2015.
2. We do not include this regulatory style because it is irrelevant. Public sector new hires receiving public service training are unlikely to be amotivated regarding their choice of being a public servant.
3. In the original design of SDT, integrated regulation exists between intrinsic motivation and identified motivation. Integration occurs when individuals bring new regulations into congruence with their values and needs. However, integrated regulation is difficult to differentiate from identified regulation. As a result, many recent SDT studies do not discuss integrated regulation (Gagné et al., 2010). The present study follows this line.
4. Many people may see both a desire for job security and a desire for high pay as the same type of motivation in job selection, namely, external regulation (i.e., taking action due to an external reward). This is misleading. “Need” differs from “want.” While job security can be deemed a basic human “need,” high pay signifies what people “want” (Tang, Tang, & Luna-Arocas, 2005). Regarding empirical evidence, Sheldon, Elliot, Kim, and Kasser (2001) have found that in the United States, a desire for money-luxury has zero impact on positive affect, but leads to a more negative affect. By contrast, a desire for security is related to a more positive affect and less negative affect. This provides preliminary evidence that a desire for job security and a desire for money do not belong to the same motivational category. More recently, Chen and Hsieh (2015) have found that pursuing a high pay differs from pursuing job security in their correlation to people’s prosocial propensity, or more specifically, PSM. A desire for high pay is negatively correlated to PSM, whereas a desire for security is positively correlated to PSM. Overall, both theoretically and empirically, it is inadequate to see the desire for job security as external regulation.

5. The two Chinese characters (科舉, Kējǔ) exist in modern Japanese, Korean, and Vietnamese languages with different pronunciations: Kakyo, Gwageo, and Khoa Cu respectively.
6. https://www.ndc.gov.tw/Content_List.aspx?n=5C824BADA3359C35.
7. <http://www.chinatimes.com/cn/newspapers/20150315000118-260209>.
8. The null hypothesis is that difference exists between the sample and population. Insignificant p values imply that there is little difference between the sample and population.
9. Multicollinearity can occur if scholars use regression. As mentioned, a high correlation exists between two autonomous motivations and between two controlled motivations. While regression assumes the independence of all predictor variables, entering highly correlated motivations into a regression model apparently violates this assumption.
10. In fact, the value assigned to each motivation is quite subjective. Theoretically, assigning 1, 2, 3, 4, 5 to external regulation, introjected regulation, instrumental regulation, identified regulation, and intrinsic motivation respectively is also acceptable, as long as the assigned values are in line with the self-determination continuum.

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