THE PROSPECTIVE INNOVATOR IN PUBLIC UNIVERSITY
BY SCRUTINIZING PARTICULAR PERSONALITY TRAITS
Abbas E.W., Hadi S., Rajiani I. *

Abstract: The administrative process innovation was adopted with enthusiasm by the Western advanced industrialized countries and was taken for granted as a superior approach that should be practiced. However, public organizations in Indonesia are structured and run differently making public sector employees may have different views toward new ways of doing the job. This article aims to reveal who innovates in the organization by analyzing typical personality traits. The hypotheses are tested through a sample of 200 employees of public universities located in South Kalimantan, Indonesia, and structural equation modeling is used. Applying Hogan Personality Inventory (HPI), the five-factor personality in this research is labeled as adjustment (neuroticism), sociability (extraversion), likeability (agreeableness), prudence (conscientiousness), and school success (openness to experience). The results are discussed regarding the implications for what one can learn from individual-level studies of personality and innovation. Suggestions are offered to those universities interested in encouraging service quality in the public sector via innovation.

Key words: five-factor personality, innovation, public sector, Indonesia
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Introduction
In Southeast Asia, scholars have become gradually interested in examining innovation in the public sector due to current expectation and demands from the stakeholders (Ab Rahman et al., 2018). One should make clear distinction that if innovation in the business sector aims at improving business performance (Mol and Birkinshaw, 2014), then in public sector, innovation aims at improving the quality of public services (Mulgan, 2014) as well as to harnessing the problem-solving capacity of governmental organizations in coping with societal challenges (De Vries et al., 2016). Commonly, public sector innovation is associated with reform movements like New Public Management (NPM) (Pollitt and Bouckaert 2017) and electronic government (Homburg, 2018).
In the Indonesian context, the urgency of innovation in the public sector has commenced being a concern since the shift of government system from centralization to decentralization. Until 2001, the Indonesian business processes
was still fully manual, slow, costly, and vulnerable to leakage. Several laws were imposed as the normative basis for local governments to innovate in administering governance in region and since then some provinces in Indonesia has become the best practice references in implementing innovation in public service for having institutional innovation through capacity building and the mindset changing from bureaucratic to entrepreneur mindset as requested by New Public Management initiatives (Common, 2017). However, the results of previous research (Darono and Irawati, 2015) indicated that Indonesian public sector apparatus prefer to work conventionally instead of operating technology information-based.

The literature reviews on public innovation conducted in recent years aim to conceptually, rather than empirically on the basis of explicit data such as in case studies and surveys, grasp the meaning and importance of public sector innovation (De Vries et al., 2016) including the one from Indonesia (for instance, Ahmad, 2018). Other researchers in Indonesia address this challenge through an interpretive research paradigm (for example, Darono and Irawati, 2015). This phenomenon can become a vital shortcoming as systematic overviews of empirical evidence are essential to conclude the existing, evidence-based body of knowledge and to establish a future research direction on a newly emerging trend of public innovation.

In the globalization era, to swim with the current trend, the public sector must have an innovation imperative in which being successful in innovation is compulsory for national growth and survival. It occurs at an individual, business, and national level and has risks and challenges at each level. A crucial focus for research, then, concerns the drivers of innovation. Which factors are associated with high and low innovation performance? Since public service motivation is strongly influenced by core personality traits (Van Witteloostuijn et al., 2016), and in the process of innovation, specific knowledge in an individual becomes a vital constituent (Urbanová, 2013), we empirically test the relationship between personality and innovation reflected in the achievement of innovation outcome of the public sector.

**Literature Review**

This chapter, a literature review (the theoretical bases), presents the research results related to the big five personality traits and innovation in the public sector environment.

**The Five-Factor Model**

Though considerable work has been invested in identifying which traits characterize an individual’s personality and thereby make him or her different from other people (Judge and Zapata, 2015; Sutin et al., 2016; Mõttus et al., 2017; Sleep et al., 2018, Cristea, 2017), personality psychologists finally have agreed to five personality constructs called as the Big Five are sufficient to describe the fundamental dimensions of normal personality (Oshio et al., 2018). McCrae and Sutin (2018) have reassured that the five-factor personality is not inventions
of western psychologists; they are part of human nature of general dispositions that somehow find expression in every culture.

The Five-Factor Model states that all personality traits can be summarized into five main factors: Neuroticism, Extraversion, and Openness to Experience, Agreeableness, and Conscientiousness (McCrae, 2015). Neuroticism includes the traits that represent characteristics such as vulnerability to stress, emotional lability, and a tendency toward negative mood states. Extraversion specifies the level of external versus internal orientation. It covers elements such as confidence, passion, positive emotionality, and willingness to involve with the sociophysical environment. Openness to Experience describes one's desire to engage in, or with, novel experiences and ideas. Openness includes any category of new knowledge, including the appreciation of modern art, acceptance of alternative value systems, and the desire to listen to challenging philosophies and worldviews. Agreeableness is more or less as the label implies. Persons who scored high on this would be described as trustworthy, honest, compliant, and modest. It measures the manner in which one conducts his or her social relationships. Finally, Conscientiousness captures such aspects as one's sense of duty, desire to achieve, willingness to complete tasks to a high standard, and self-discipline (Steel et al., 2012). Hogan (2005) developed self-report inventory to measure Big Five factor where the dimension of the Big Five is labeled as Adjustment (Emotional Stability), Sociability (Extraversion), Likeability (Agreeableness), Prudence (Conscientiousness) and School Success (Openness to Experience). Adjustment, sociability, and prudence are positively related with individualism (Hofstede and McCrae, 2004), while as a collectivist society, Indonesian is scored low on these dimensions. In this context, these variables are excluded from the model.

Management Innovation

Although beginning to attract academic interest, management innovation remains an under-researched topic (Nieves and Ciprés, 2015). Scholars have started emphasizing that, to be optimal, technological innovation needs to be combined with management innovation (Damanpour and Aravind, 2012). If technological innovation is concerned with the introduction of changes in technology relating to an organization's primary activity, management innovation reflects changes in the way management work is done, involving a departure from traditional processes (i.e., what managers do as part of their jobs); in practices (i.e., the routines that turn ideas into actionable tools); in structure (i.e., the way in which responsibility is allocated); and in techniques (i.e., the procedures used to accomplish a specific task or goal). About this, Mol and Birkinshaw (2014) propose that management innovation tends to emerge through necessity, as opposed to technological innovations that may first be developed in a laboratory and for which an application may subsequently be found. Mol (2018) define management innovation as the generation and implementation of new management practice, process, structure, or technique that is recent to state
of the art and is aimed at further organizational goals. Innovation in the public sector is defined as the creation and implementation of new processes, products, services, and methods of delivery that will create improvements in the efficiency, effectiveness or quality of outcomes (Mulgan, 2014). In this context, innovation in public sector resembles management innovation where the difference is only in the place of practice where management innovation occurs in the business setting while the later is the government agencies. In the public sector, innovation can be triggered by several factors such as the shift in government policies, stakeholder push, technological adoption, or individuals awareness toward something new to improve the way they work (Darono and Irawati, 2015). Observing the current literature on public sector innovation (e.g., De Vries et al., 2016; Pollitt and Bouckaert, 2017; Man and Răvaş, 2017), we conclude that the documentaries depend heavily on intra-organizational process innovations, which are strictly connected to two significant changing flux in public administration, namely NPM and e-government. Further, the objectives of public sector innovation are not only increasing effectiveness and efficiency (Kim et al., 2009), tackling societal problems, improving customer satisfaction (Turner et al., 2011), as well as involving citizens and private partners (Carter and Bélanger, 2005).

Data and Methodology

This research employs quantitative methods to analyze which personality traits of government employees were tending to achieve innovation practices in the public sector. Samples of 200 civil servants were obtained from 2 (two) public universities in Banjarmasin, South Kalimantan Province, Indonesia. This area is chosen as until now it has never received an award from the central government in public service innovation. Common civil service practice, the government bodies in this province recruited predominantly high school and university graduates, who entered the employment hierarchy at basic entry levels. Selection emphasized applicants' educational qualifications and paid little regardless to work experience gained from other organizations. Although some civil service-style personnel practices were reformed, essential counter-productive elements were retained, including seniority-based promotions and lifetime employment. Conditioned this way, the authors applied purposive random sampling by intentionally selected employees in the lowest hierarchy as they performed the service based on the instruction mandated by the law through the reinforcement from immediate supervisors. The purposive sampling technique is a non-probability sampling that is primarily used when one needs to study for sure what needs to be examined and determine who can and are willing to provide the information under knowledge or experience (Oliver and Jupp, 2006).

Path analysis with Partial Least Square was used to test the relationship of personality and innovation. As PLS is well known for the capability of handling small sample sizes and few indicators, a sample numbered 100 to 200 is usually a good starting point in carrying out path modeling (Goodhue et al., 2012).
The data for personality was collected by standard questioners developed by Hogan (2005) and self-adjusted questionnaires to measure the inclination to innovate. Based on the theoretical framework which was detailed in the previous part of the paper, the following research hypotheses were set before the research:

The research hypothesis 1 (H1): Hypothesis 1: On its established links to be well-educated, school success is positively associated with innovation.

The research hypothesis 2 (H2): Likeability is positively associated with innovation since being easy to live with, and sensitivity to others are critical to managing innovation networks.

Results

The inner model of this research is shown in Figure 1.

![Figure 1. The inner model](image)

The result summary for reflective outer models is presented in Table 1.

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>Indicators</th>
<th>Outer Loadings</th>
<th>Average Variance Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Success</td>
<td>Good memory</td>
<td>0.813</td>
<td>0.792</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>0.767</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Math ability</td>
<td>0.788</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reading</td>
<td>0.801</td>
<td></td>
</tr>
<tr>
<td>Likeability</td>
<td>Easy to live with</td>
<td>0.855</td>
<td>0.783</td>
</tr>
<tr>
<td></td>
<td>Sensitive</td>
<td>0.736</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caring</td>
<td>0.803</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Likes people</td>
<td>0.783</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No hostility</td>
<td>0.736</td>
<td></td>
</tr>
<tr>
<td>Innovation Output</td>
<td>Increasing effectiveness</td>
<td>0.680</td>
<td>0.745</td>
</tr>
<tr>
<td></td>
<td>Increasing efficiency</td>
<td>0.791</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tackling societal problems</td>
<td>0.713</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improving customer satisfaction</td>
<td>0.828</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Involving citizens</td>
<td>0.716</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Involving private partners</td>
<td>0.742</td>
<td></td>
</tr>
</tbody>
</table>
Conventionally, “Cronbach’s alpha” is used to measure reliability in social science research but it tends to provide a conservative measurement in PLS-SEM. Prior literature has suggested the use of “Average Variance Extraction (AVE) for convergent validity” as a replacement (Hair et al., 2012). From Table 1, such values are shown to be larger than 0.5 so high levels of convergent reliability have been demonstrated among all three reflective latent variables (Bagozzi et al., 1988; Hair et al., 2012). The score for the path coefficient and p-values in the inner model are shown in Table 2.

Table 2. The result of the path coefficient

<table>
<thead>
<tr>
<th>No.</th>
<th>Variables</th>
<th>Path Coefficient</th>
<th>R²</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>School success → innovation</td>
<td>0.384</td>
<td>0.40</td>
<td>0.00</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>Likeability → innovation</td>
<td>0.353</td>
<td>0.36</td>
<td>0.00</td>
<td>Significant</td>
</tr>
</tbody>
</table>

The result indicates that the school success traits (those with good memory, good education, good at math as well as good at reading) positively affect the implementation of public sector innovation to increase effectiveness, to improve efficiency, to tackle societal problems, to increase customer satisfaction, to involve citizens, and to engage private partners. The path coefficient for this construct is 0.384, and the p-value is 0.00. Similarly, likeability traits (those who are easy to live with, sensitive, caring, like people and no feeling of hostility) positively influence the implementation of public sector innovation to increase effectiveness, to improve efficiency, to tackle societal problems, to increase customer satisfaction, to involve citizens, and to include private partners. The path coefficient for this construct is 0.353, and the p-value is 0.00.

The model goodness of fit is measured with the Stone–Geisser Q-square test for predictive relevance (Chin, 2010) with the formula:

\[ Q^2 = 1 - \prod_{i=1}^{n} (1 - R_i^2) \]

The coefficient of determination (R²) for school success and likeability is 0.40 and 0.36 respectively. Based on these figures, the Q-square predictive relevance is calculated as follows:

\[ Q^2 = 1 - (1 - R_1^2)(1 - R_2^2) \]
\[ = 1 - (1 - 0.40)(1 - 0.36) \]
\[ = 1 - 0.60 \times 0.64 \]
\[ = 1 - 0.384 = 0.616 (61.6\%) \]

Since Q-squares is greater than 0.5, the model is stable and the predictive relevance requirement is satisfactory.

**Discussion**

The primary hypothesis in this research was that there is a relationship between personality factors and achieving public sector innovation objective. The multivariate statistical test has provided sufficient support where school success...
(openness to experience) and likeability (agreeableness) traits proved positive associations with innovation. These findings indicate that at least certain aspects of personality, as measured by the Hogan Personality Index; play an essential role in innovative activity in the public sector. Even though public sector is somewhat different from business sectors regarding the objective of the innovation, the finding of this research is in line with the result that school success and likeability are factors of personality related to innovation (Steel et al., 2012). George and Zhou (2001) assert that employees with high school scores appreciate for things that are novel and unique due to their higher sensitivity to and range of experience may cause them to show up with innovative solutions to problems and creative ideas to improve on current practices. De Vries et al. (2016) in their review of characteristics of individuals who innovate in public sector listed the factors of employee autonomy (empowerment), organizational position, job-related knowledge and skills, creativity (risk-taking, solving of problems), demographic aspects, commitment/satisfaction with job, shared perspective and norms and innovation acceptance as the most determinant factors. Likeability (agreeableness) relates to getting along with others in comfortable and satisfying interaction (Matzler et al., 2011). Patterson et al. (2009) indicated the significance of cooperation, communication, articulation, and social networking of employees for successful innovations.

The discussion mentioned above implies that employees with school success and likeability personality will innovate if the situation allows for the manifestation of creativity, eg. being empowered. This way, the duty of line managers is to develop the condition for innovation and creativity (Lichtarski and Trenkner, 2018; Ulewicz and Kucęba, 2016).

The organization has possessed people required in public sector innovation rhetoric yet the progress has remained slow and unconvincing. This way, we examine the status quo by using institutional analysis theory. Holland (2007) observing from a public policy reform point of view, defined institutional analysis as an exploration based on understanding how some rules mediate and distort, sometimes fundamentally, the expected impacts of public policy. The current practice now is that employee performance is run by completing out evaluation sheet known as DaftarPenilaianPelaksanaanPekerjaan (DP3, literally: Work Implementation Evaluation Register). The DP3 approach emphasized intangible employee attributes such as responsibility, loyalty, honesty, cooperativeness, general attitude, and initiative, rather than on output. The DP3 assessment was usually favorable, and there was little differentiation among employees. As a result, nearly all individuals received an automatic salary increase every two years, and an automatic salary grade increases every four years. In circumstances where DP3 focus on ‘loyalty’ as the principal indicator of ‘performance,’ employees had little opportunity to improve productivity by being creative and innovative. Those scoring high in school success and likeability, thereby contributed more to company performance might be demotivated by finding the fruits of their labors.
going disproportionately to ‘free riders’. As Van Witteloostuijn et al. (2016) denote that public service motivation is strongly affected by core personality traits - in this case school success and likeability— the spirit of innovation owned by these types of personality is gradually diminished due to a conducive working environment. The relationship between school success and innovation implies that public sector leaders should encourage people to model different thought as a way to boost the economic growth; civil servants should be willing to consider unconventional or unusual alternatives regardless of their place in the innovation process. Further, the findings concerning likeability suggest that those who deal initially with society in providing services should be informed that their greatest asset when dealing with people is their reputation as an honest person; one whom the community can trust.

**Conclusion**

While innovation has been one of the most addressed topics among business practitioner as well as academic discussion, most research has tended to address innovation as the development of new technology, products, and services. Consequently, technological innovation has become a mantra in innovation research. As organizations are confronted with increased competition and a rushing leap of technological change, they need to consider a non-technological innovation that is more challenging to replicate and may give a longer lasting competitive advantage. These non-technological forms of innovations have been referred to as management innovation. The success story of the most admired Southeast Asian company Air Asia is an excellent example that owes its success to management innovation, not technology innovation. Public sector innovation has become a fundamental issue on the agenda of policymakers and academics when discussing the role of government in the era of economy 4.0. Since the government all over the world is currently adopting the model of business practice under the label of New Public management, the public sector is gradually changing the nature of control within organizations by for adapting organizational structures, processes, and practices to generate a valuable source of competitive advantage. In case of the public university in Indonesia, administrative process innovation remains slow even though the ministry of research and higher education has started to include innovation as one of evaluated elements in determining the rank of the university besides human resources, management, research, and students’ achievement.

As management innovation both in business and public sector are still relatively under-researched, a better understanding of management innovation or administrative process innovation should be high on the research agenda. Given that innovation occurs in a trajectory following a particular path, identifying which individuals will innovate by observing the personality factors is a good starting point of departure. However, a limitation of the current study is the nature of the sample which is drawn from two public universities making the generalizability of the results to other public services is unknown.
Thus, it is possible that the relationships between personality dimensions and workplace behavior may vary across Indonesia. Future researchers could investigate the comparison of the personality traits performing innovation in the public sector in other countries not only in Indonesia or expand into the more heterogeneous sample of respondents.

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SZCZEGÓŁOWE BADANIE CECH PESONALNYCH JAKO INNOWATOR DLA UNIwersytetów Publicznych

Streszczenie: Innowacje w procesie administracyjnym zostały przyjęte z entuzjazmem przez zachodnie zaawansowane kraje uprzemysłowione i uznano je za oczywiste, jako nadrzędne podejście, które powinno być praktykowane. Jednak organizacje publiczne w Indonezji są zorganizowane i działają w różny sposób, sprawiając, że pracownicy sektora publicznego mogą mieć różne poglądy na nowe sposoby wykonywania pracy. Niniejszy artykuł ma na celu ujawnienie, kto wprowadza innowacje w organizacji, analizując typowe cechy osobowości. Hipotezy są testowane na próbie 200 pracowników uniwersytetów publicznych zlokalizowanych w południowym Kalimantan w Indonezji i wykorzystuje się modelowanie równań strukturalnych. Stosując Inwentarz Osobowości Hogana (HPI), pięcioczynnikowa osobowość określana jest, jako dostosowanie (neurotyczność), towarzyskość (ekstrawersja), sympatia (ugodowość), roztropność (sumienność) i sukces szkolny (otwartość na doświadczenie). Omówiono wyniki dotyczące konsekwencji, jakie można wyciągnąć z badań osobowości i innowacji na poziomie indywidualnym. Propozycje oferowane są uniwersytetom zainteresowanym promowaniem jakości usług w sektorze publicznym za pomocą innowacji.

Słowa kluczowe: pięcioczynnikowa osobowość, innowacja, sektor publiczny, Indonezja