

WORKING PAPER

When Behavioral Science Meets Public Administration: An Exploration of Behavioral Approach in Public Administration Research

Paul Nyray A. Antolino

Ma. Regina M. Salonga

MPA Students

*National College of Public Administration and Governance
University of the Philippines Diliman*

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Abstract

The importance of behavioral science in public administration (PA) has been a topic of interest since the infancy of the discipline. It has been advocated by some well-known PA scholars since then. Despite this recognition, there is a failure of connecting the two disciplines. Even in the Philippines, there is a paucity of research studies of using a behavioral approach in public administration research. To fill this gap, this study explores the behavioral approach in the leading journal of public administration in the country, the Philippine Journal of Public Administration (PJPA), using content analysis. The results revealed that behavioral science is manifested in PJPA articles with varying degrees of application. Behavioral approach is employed in the different subfields of public administration. However, the trend of use is fluctuating over the years. Further, the Philippines is lagging behind its neighboring countries such as Singapore, Japan, Thailand, and other countries in terms of integrating this approach in PA research. This study recommends further incorporation of behavioral science in the subfields of public administration, as well as for further use of this approach in solving social issues.

Keywords: *behavioral public administration, behavioral approach, behavioral science, content analysis, PJPA*



The nexus between behavioral science and public administration (PA) has been given a spotlight by some public administration scholars such as Anthony Downs (1967), Herbert Simon (1976), and Dwight Waldo (1948). They argued that the knowledge of human choice and human behavior should be integrated in public administration (Simon, 1978; Dahl, 1947). A plethora of research studies have been conducted to reinforce its relevance. Scholars who explored this approach attempted to deepen the connection between the two fields of study and facilitated the emergence of behavioral public administration, an approach that uses insights from psychology to interpret the behaviors and attitudes of the individuals and groups (See Grimmelikhuijsen et al., 2017).

The need to study the behavioral approach in public administration is of paramount importance. Its application has been widely employed in exploring solutions to social issues, such as discrimination in the public setting, motivation and burnout of public employees, red tape, and even climate change (See Olsen et al., 2019; Jilke et al., 2018; Resh et al., 2018; Liu et al., 2017; Bakker, 2015; Wright, 2004; Kaufmann & Feeney, 2014; White, 1999; Hopkins, 1980). Thus, behavioral science theories are also valuable in addressing macroscopic problems. Understanding the integration of the two perspectives is not just vital at both the individual and societal levels.

A greater demand as regards the integration of behavioral science in public administration research has been noted over the years. However, some scholars recognize the failure of integrating these two fields (See Olsen et al., 2018; Waldo, 1965; Waldo, 1948). Even in the Philippines, the number of research studies using behavioral approach in public administration research is insufficient; although some prominent scholars in the country have used behavioral science in their research (See Brillantes & Perante-Calina, 2018). In their study, Brillantes and Perante-Calina included psychological theories in their mindset, behavior, and values dimension as one of their leading facets in their framework. Aside from Brillantes and Perante-Calina (2018), some other local research studies integrate the use of the two disciplines (See Cariño, 2008; Torneo, 2020). This limited integration is considered as one of the research gaps in the study.

One of the contributions of this study is the exploration of behavioral approach in public administration research, especially in the *Philippine Journal of Public Administration (PJPA)*. Accordingly, the research question of this study is: how are behavioral science concepts used in the articles in the *PJPA* from 1990 to 2019? The subsequent research question is: how are behavioral science concepts used in the different subfields of public administration as shown in the *PJPA* articles from 1990 to 2019?

Review of Related Literature

The flow of the review of the related literature section is as follows: background of behavioral public administration, PA scholars who advocated behavioral PA, trends of use of behavioral science concepts in the subfields of public administration, and trends in PA education in the Philippines.

Background of Behavioral Public Administration

Behavioral public administration is an “interdisciplinary analysis of public administration from the micro-perspective of individual behavior and attitudes by drawing upon recent advances in our understanding of the underlying psychology and behavior of individuals and groups” (Grimmelikhuijsen et al., p. 46, 2017). People in the public sector such as individuals and groups of public servants, managers, and citizens are units of analysis, particularly their attitudes and behaviors. Behavioral science and psychology is integrated into the methods of public administration research (Grimmelikhuijsen et al., 2017).

Advocates of Behavioral PA

Various scholars have promoted the use of behavioral science in public administration research. One of them was Herbert Simon, who argued for bounded rationality in human beings (Nørgaard, 2018). Simon claimed that, due to the limited time to absorb all the information from the environment, individuals would just opt for what is good enough. He established a relationship between PA theory and the knowledge from human behavior (Simon, 1955).

Another well-known scholar who investigated the relationship was Anthony Downs (1967). He argued that, due to psychological predispositions, people in organizations respond differently to rules



and incentives. Downs (1967, as cited in Nørgaard, 2018) further argued that bureaucratic behavior is influenced by the bureaucrats' position, environment, and personality, a factor that is difficult to change or alter.

The development of behavioral PA as a field of study was an effort to build an emerging discipline from behavioral sciences and PA (Grimmelikhuijsen et al., 2017). In particular, the intention is to create a new field of study that integrates behavioral science into PA research. Simon and Downs both argued that PA as a discipline needs to employ a multidisciplinary perspective that integrates and uses theories and concepts from other social science disciplines, such as political science, economics, law, sociology, psychology, and others (Grimmelikhuijsen et al., 2017).

Trends of Use of Behavioral Science Approaches in PA Subfields

Behavioral science has various applications in the various PA subfields, such as organizational management, public policy, and public sector bureaucracy and administration.

In the subfield of organizational management, one scholar used behavioral approach in determining the motivational factors that influence the behaviors of public employees (Bellé, 2015). Another scholar used framing effects to understand how satisfaction measures affect Danish citizens' evaluation of government services (Olsen, 2015). Earlier behavioral PA research also employed this approach. For instance, Buchanan (1974) used the behavioral approach to study the attitudes of business executives and government managers. Schott (1986) also utilized this approach to study the job satisfaction and organizational satisfaction in the public sector. Bretschneider and Straussman (1992) explored the concept of overconfidence in assessing the risks in policy statistical estimates using cognitive psychology theories. Other studies in organization management utilized behavioral approach (See Resh et al., 2018; Wright, 2004).

In public policy, scholars from the Behavioral Insights Team, which is co-owned by the UK Government, integrated behavioral science to shape public policies (Hallsworth et al., 2018). Insights were drawn from heuristics (or mental shortcuts) and

automatic responses that affect people's decision making. The team conducted different methods in research such as the experiments, surveys, and others to reinforce their theories and assumptions within their jurisdiction. Moreover, in public sector bureaucracy and administration, Van Ryzin (2011) examined the factors that influence public trust in public servants with regard to the process (fairness and equity) in the delivery of services. Grimmerlikhuijsen and Meijer (2014) also investigated on impact of the tendency to trust the government in general and prior knowledge on the connection between trust and transparency. Other researchers used behavioral science in the study of public sector bureaucracy and administration (See Kaufmann & Feeney, 2014; Riccucci, Van Ryzin & Lavena, 2014).

Behavioral Science Application in PA Research in Western and Asian Countries

Countries in Europe and America have applied behavioral science in PA research (See Tummers et al., 2016; Grimmerlikhuijsen et al., 2017; Olsen, et al., 2018). The *Public Administration* journal has demonstrated a steady increase in the usage of behavioral science in public administration research over the years. It is seen as the leading public administration journal in Europe, with 80% of the articles coming from different institutions in the United Kingdom, Germany, Denmark, and the Netherlands. Articles in the said journal utilized various concepts and methods from behavioral science that are not frequently used in public administration. A similar trend is observed in the leading journals of public administration based in the US such as the *Public Administration Review* (PAR) and the *Journal of Public Administration Research* (JPART), where 50% of the articles came from various institutions in America. The trend of the application of behavioral approach is increasing through time as well (Olsen, et al., 2018).

Western countries also applied behavioral science to help improve governance. These developments suggest the importance of behavioral science in PA (See Olsen, 2015; Thaler & Sunstein, 2008). In the United Kingdom, the Atlantic and the Cabinet Office established the Behavioral Insights Team. In the United States, White House Social and Behavioral Sciences Team was created by former President Obama. The creation of these



teams acknowledges the paramount importance of behavioral science in changing behaviors and mindsets of the citizens (Olsen et al., 2018).

In Asia, some countries have been exploring the use of behavioral science approaches in PA research. In 2012, Singapore, one of the forerunners in employing behavioral approach in public administration specifically in public policies (Straßheim, 2020), established the Human Experience Lab (Lee & Ma, 2020). In this initiative, various stakeholders and government agencies conduct research to produce scientific evidence on the effectiveness of behavioral science in public policy (Williamson, 2015). Simulations, prototyping, and pilot-testing prior to the implementation and scaling up of these outputs at the national level aimed to help public service providers and policymakers.

Since the 1960s, Singapore has already been incorporating behavioral science in PA, especially public policy (Afif et al., 2018). Many scholarly researches that apply behavioral approach have already been published. Since then, various initiatives have been implemented to reinforce the usefulness of this approach. For instance, the Singaporean government institutionalized the default system in organ donor enrollment (Ong, 2015). Research on policy design using behavioral approach was also published in 2011 by the Singapore Civil Service College (Low, 2011). The Singaporean government's application of behavioral science takes place at the agency level (Soon, 2017). Also interesting is the partnership of the government with the academe to further integrate behavioral science and embed design thinking into public policy. The government also relied on the private sector, especially those with the expertise in behavioral science and design thinking, to further improve these initiatives (Pykett et al., 2017).

In Japan, many initiatives integrating behavioral science in PA were undertaken. The Behavioral Sciences Team (BEST) was established in 2017 under the Ministry of Environment to apply insights and knowledge from behavioral science to government policies and strategies. BEST collaborates with the academe, industry, central and local government agencies, and other stakeholders (BEST, 2019). Local governments participated in seminars, lectures, trainings, and other programs

conducted by BEST. Among the local governments in Japan, the City of Yokohama was the first to establish in 2019 the Yokohama Behavioral Insights and Design Team, the first local government to be recognized by BEST and Organisation for Economic Co-operation and Development (OECD). The Human Behavior (HuB) council, which is a public-private partnership, was also established to address social issues through human behavior perspective. Consequently, many research studies that utilize behavioral insights have been published (BEST, 2019).

Thailand also strives to integrate behavioral approach in PA research. The government established the Behavioral Science Research Institute (BSRI) in 1975 to address social issues by creating models and insights that are relevant to Thais (Mohan, 2017). BSRI was developed through the contributions of various disciplines such as psychology, sociology, and anthropology (Suvannathat, 1983). BSRI was later expanded to the disciplines such as in education and educational psychology (Mohan, 2015).

Trends of PA Education in the Philippines

In the Philippines, the integration of behavioral science in PA research can be gleaned through the understanding of trends in PA education. Since the establishment of the Institute of Public Administration in 1952, the growth and development of the Philippine PA education has been constantly changing due to the various demands and concerns for each period (De Guzman, 1986). In the 1950s and 1960s, PA education focused on development administration, particularly on internal management, organization and management, personnel management, fiscal administration, government staff functions, and local government structures and processes (Cariño, 2007; Brillantes & Fernandez, 2008). In the 1970s, PA education focused on new public administration, particularly on social change, economy, and politics, stressing the need to return the discussions on social justice and freedom (Cariño, 2008).

In the mid-1980s, around 60 universities offered PA programs, mostly at the masters level (De Guzman, 1986). In the 1990s, governance paradigm and good governance frameworks emerged (Brillantes & Fernandez, 2008). The role of voluntary sector organizations, people's organizations, and non-government organizations were deemed important

in the delivery of public services and addressing important political and socioeconomic issues during the post-Marcos era. The National College of Public Administration and Governance (NCPAG) offered voluntary sector management as one of the fields of specialization in its master's program. The voluntary sector management is seen as having potential in enhancing PA models and widening the governance discourse (Cariño, 1997).

In the 2000s, PA was focused on e-governance and information, communications, and technology (ICTs). This focus has been reflected in the offering of spatial information management in the master's program at the NCPAG. The field particularly focused on sustainable development, global citizenship, results-based management, governance, governmentality, and ICTs. In 2010, through the Commission on Higher Education (CHED) Memorandum Order (CMO) No. 6, s. 2010, the guidelines and policies for the bachelor's degree in public administration (BPA) programs in the Philippines were established (Torneo, 2020).

In the past decades, the major themes in PA research were: social reform movement, administrative reform and accountability, national development and administrative model development, local administrative movement and decentralization, and administrative management design (Reyes, 1995). From the studies that were mainly contributed by foreign authors and scholars who tackled administrative systems, Reyes (1995) identified a sixth theme— international and comparative administration studies.

In another study that comprehensively tracked PA research in the Philippines, Cariño (2007) identified the major research areas that flourished from 1950s to early 2000s: state market relations, decentralization and devolution, popular participation or citizenship, bureaucracy-democracy, democracy as a proper subject for public administration, studies of political institutions, fiscal administration, organization and management, and personnel or human resources administration. These themes emerged as areas of study in PA education. Meanwhile, behavioral approach was not prominently used by the Philippine PA scholars in their research. This study attempts to fill this gap by exploring the use of behavioral approach in public administration research in the country.

Conceptual Framework

The conceptual framework (Figure 1) of this study discusses five important components of behavioral approach to PA. These include behavioral science, public administration, perceived usefulness of behavioral science in PA, application of behavioral science in the PA subfields, and the future direction of behavioral approach. These dimensions highlight the importance of behavioral science in Philippine PA.

Figure 1. Conceptual Framework of Behavioral Public Administration



Behavioral Science

The first component of this framework is behavioral science, which illustrates how attitudes and habits of individuals and groups react in their environment, both psychologically and physiologically (Aizawa & Karube, 2001; Leigh & Reiser, 1977). It also studies how individuals make decisions and behave in a complex environment. Behavioral science involves constant research in the social sciences and the creation of models and frameworks to understand human behavior (Cooke et al., 2018).

In the classical approach to predicting human behavior, cost-benefit analysis is utilized. Individuals weigh the costs and benefits of different options from all available information and choose the best one. In the behavioral approach, individuals



do not necessarily choose the best option. Rather, they make decisions based on whether or not the information is available. Behavioral science has been used to understand human behavior so that it can be applied to improve policies, programs, and outcomes (Cooke et al., 2018).

Public Administration

Public administration (PA) as a field is also added in the framework. This framework used the definition of Reyes (1995), referring to public administration as the implementation of public policy. Reyes further described PA as a field dedicated to people who want to be in the public service. He also argued that public administration branched out from the field of political science. Moreover, he pointed out that PA adopted behavioral science into their discipline along with other social science theories.

Brillantes and Fernandez (2013) listed the different subfields of public administration. Public fiscal, local government, public personnel, and organizational and management are categorized as traditional subfields. Through time, new subfields of public administration emerged as a result of the constant studies and changing demands from scholars. These new subfields include policy analysis and program administration, public enterprise, voluntary sector, spatial information management, and e-governance.

Behavioral Public Administration and Governance Indicators

The behavioral PA and governance dimension is included given the usefulness of the behavioral approach in public administration research. Perceived usefulness is the extent to which an individual considers using a particular system that enhances performance (Davis, 1989). The performance of a particular function, in the PA context, is influenced by external factors and behavior that contribute to the attainment of good governance (Sulaiman et al., 2019). Kaufmann et al. (2010) defined governance as:

the traditions and institutions by which authority in a country is exercised. This includes (a) the process by which governments are selected, monitored and replaced; (b) the capacity of the government to effectively formulate and implement sound policies; and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them. (Kaufmann et al., 2010, p. 3)

Moreover, six indicators to measure governance have been identified: (a) political stability and absence of violence/terrorism, (b) voice and accountability, (c) government effectiveness, (d) the rule of law, (e) regulatory quality and (f) control of corruption.

Application of Behavioral Science in the Subfields of Public Administration

As mentioned, behavioral science has various applications in the following subfields of public administration, e.g., public sector bureaucracy and administration (Kaufmann & Feeney, 2014; Riccucci et al., 2014), public policy (Hallsworth et al., 2018; Nørgaard, 2018), organizational management (Bellé, 2015; Bakker, 2015; Resh et al., 2018; Wright, 2004), local government (Yousef, 2017), and even in ICT and e-government (Turnip et al., 2018; Drigas et al., 2011).

Future of Behavioral Approach to Public Administration

Behavioral approach to PA is expected to focus more on tackling societal problems, such as improving sustainability (Preuss & Walker, 2011), reducing discrimination in public services (Anderson & Guul, 2019), and ameliorating administrative burden for citizens (Herd & Moynihan, 2019). Strengthening the behavioral approach to PA entails nurturing the cumulative knowledge from other scholars who are interested in this approach, connecting the macro and meso-perspectives, and exploring various methods that can be used (Tummers, 2020).

Methodology

This study adopts the content analysis method by Grimmekhuijsen et al. (2017) to analyze the *PJPA* articles from 1990–2019. Content analysis aims to analyze gathered data and interpret its underlying meanings (Schreier, 2012). The description and quantification of phenomena rest on a dynamic and objective means (Schreier, 2012; Downe-Wamboldt, 1992). This method involves reducing data into concepts where research phenomena can be properly described (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). This approach can be done through the creation of conceptual maps, models, concepts, or categories (Elo & Kyngäs, 2008; Morgan, 1993; Weber, 1990). Content analysis is also one of the methods used for textual analysis (Cavanagh, 1997).



The study used the *PJPA* articles from 1990 to 2019 as the unit of analysis. The *PJPA*, a peer-reviewed journal, publishes research and other scholarly works about public administration and governance in the Philippines and abroad. This journal features articles tackling a variety of problems in the subfields of public administration ("*Philippine Journal of Public Administration*," n.d.).

The authors collected data from the *PJPA* archive from 1990 to 2019. In designing the sample, they needed to establish the "universe" where they would get their sample. Babbie (2014) emphasized that using alternative sampling techniques, such as random, stratified, and systematic, among others, is no longer needed once the sampling frame, units of analysis, and the observations that are convenient to these units have been established. Much of the methodology for data gathering and collection was patterned from Stemler (2000).

To find out how behavioral science concepts are used in the articles in the *PJPA* from 1990 to 2019, a predefined set of categories was created. These categories would ensure the reliability and the validity of the study. The common behavioral science concepts used as categories were based from the literature that are commonly occurring in behavioral science and public administration research (See Grimmelikhuijsen et al., 2017; Tummers, 2020).

However, during the coding, categories were recalibrated after some articles used behavioral science concepts that did not fall in any previously identified categories. Hence, the final categories used in the study, which include both predetermined and emerging categories, are "gender and sexuality," "human personality," "human motivation," "organizational development," "mental health," "psychological research," "human behavior," "indigenization," and "human cognition."

Other data gathered from the *PJPA* articles include the title of article, name/s of the author/s, institutional affiliation of the author/s, total number of words used in the journal, keywords, references, year of publication, and author information (e.g., gender, fields of expertise, and background). These data aim to enrich results and discussion.

To address the subsequent research question—how behavioral science concepts are used across

different subfields of public administration in the *PJPA* articles from 1990 to 2019—the journal articles that used behavioral science theories and concepts were classified according to the subfields of public administration, i.e., organization studies, public enterprise, public policy and program administration, voluntary sector management, spatial information management, and local governance.

The *PJPA* articles were screened at two levels. The first level of screening determined the presence of behavioral science concepts. In the *PJPA* HeinOnline database search bar, the authors entered each one of the 46 keywords into the search bar at a time. The title, abstract, keywords, body, and references of the article were checked. The degree of use of behavioral science concepts and approaches in public administration research was also considered.

The second level of screening focused on formal coding. One researcher coded data culled from articles published from 1990 to 2005, while the other coded data from articles published from 2006 to 2019. Coding was done through a shared Google Sheets file so that each researcher could monitor and track each other's work and to increase intercoder reliability. Once the keyword/s were identified in an article, the researchers read the abstract and the body to determine the appropriate category. The articles were also categorized according to the subfield of public administration they belong.

The degree of use of behavioral science concepts was then assessed. In this aspect, each of the articles was tagged as "no use" (0) if no behavioral science concept was found in its body text; "superficial" (1) if at least one concept was used in a sentence or phrase; "adequate" (2) if at least one concept was adequately discussed in a paragraph; and "substantial" (3) if the concept was substantially used in the article, i.e., integrated in the framework or methodology or in the discussion of the paper.

The researchers noted that some articles did not use all the 46 keywords initially identified in the proper context. Some keywords did not actually appear in the articles. Ultimately, only 23 keywords were retained for analysis.

Reliability and Validity in Content Analysis

In content analysis, reliability entails the consistency of the results of the coding scheme.

In particular, since two researchers are involved in coding the data, intercoder reliability needs to be established (Neuendorf & Kumar, 2015). Meanwhile, validity is the extent to which a research instrument is able to measure the construct they purport to measure (Neuendorf & Kumar, 2015). While validity is important in content analysis, it is often the exception rather than the rule.

Results and Discussion

This section discusses the following: 1) use of behavioral science concepts in selected *PJPA* articles and 2) comparison of the use of the concepts in the Philippines with that in other Asian and Western countries.

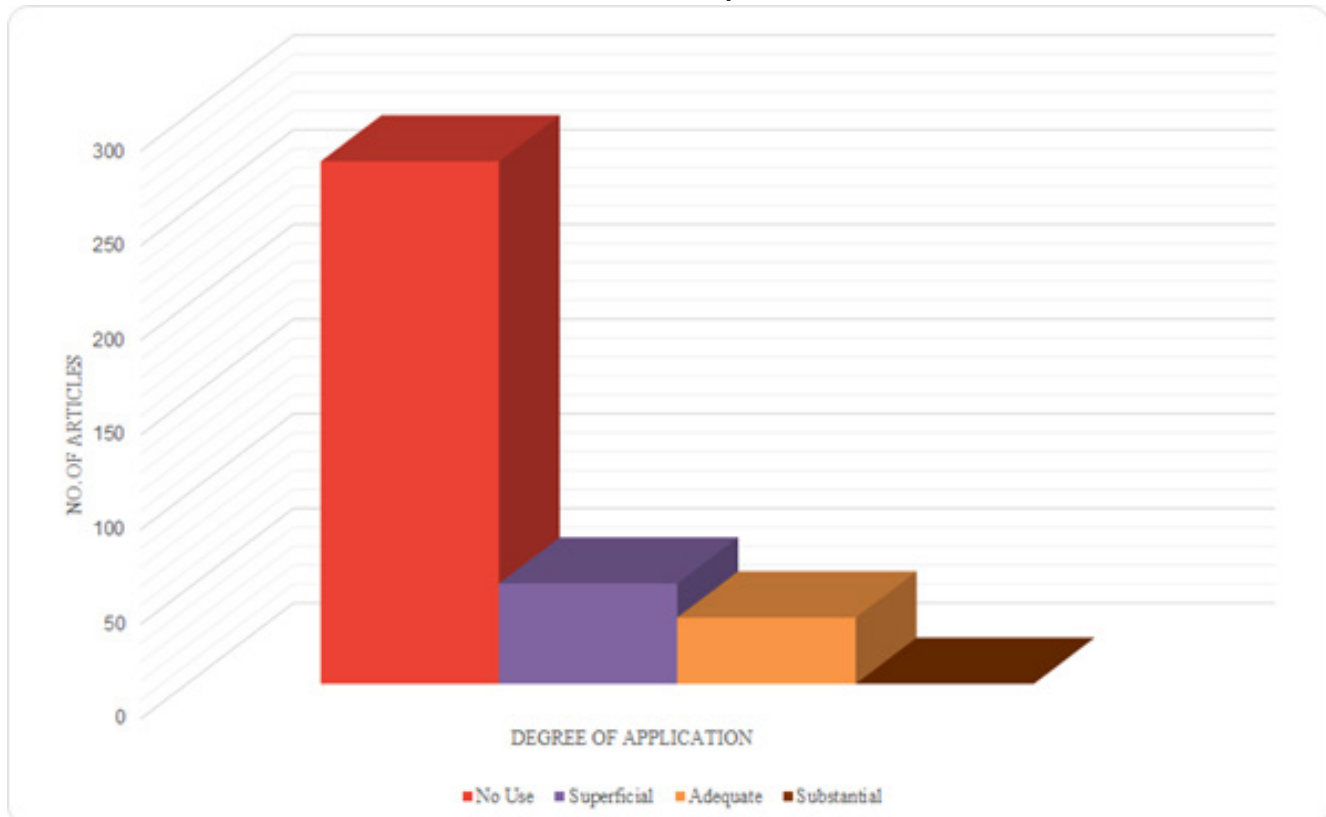
Application of behavioral science concepts in *PJPA* articles

The results revealed that 276 articles did not use behavioral science concepts in PA research. At least 53 articles superficially used these concepts, while only 35 articles adequately used them. On the

other hand, none of the articles considered in this study substantially integrated behavioral science concepts in PA research (Figure 2).

Out of the articles that adequately used behavioral science concepts in PA research, 12 (34.3%) dealt with the concepts of human cognition, such as human knowledge, attitudes, rationality, and cognitive dissonance. Eight articles (22.9%) used organizational development concepts, e.g., employee-related activities and performance evaluation. Four articles (11.4%) tackled human motivation, particularly using psychology theories and concepts. Three articles (8.6%) tackled human behavior in organizations, rewards or incentives, and prosocial behavior. Two articles (5.7%) each dealt with gender and sexuality, human personality, and psychological research. One article highlighted the emotional and psychological well-being of participants, while another one explored the indigenization of PA, adopting concepts from *Sikolohiyang Pilipino*.

Figure 2. Number of *PJPA* articles from 1990 to 2019 according to degree of application of behavioral science concepts in PA research



The definitions of these behavioral science concepts are important. As defined by the American Psychological Association and National Association of School Psychologists (2015), gender refers to an individual's feelings, attitudes, and behaviors toward his/her biological sex, while sexuality is how people express themselves physically or emotionally toward other as sexual beings (El, 2004). On the other hand, MacAdams (2009) defines human personality as a person's uniqueness or individuality in characteristics as whole. Abraham Maslow, on the other hand, defines human motivation as the individual's set of priorities of his/her needs and wants (as cited in Mawere et al., 2016). Organizational development is the application of planned and systematized strategies, structures, and processes leading to organizational effectiveness (Cummings & Worley, 2009).

Moreover, the World Health Organization (2003) defines mental health as an individual's state of wellbeing and his/her ability to be resilient and productive despite the different stressors that may come into play. Psychological research is the process where researchers gather and analyze data on behavior and mental processes of individuals ("Introduction to Psychological Research," n.d.). Human behavior is defined as an individual's response to the environment through both direct

and indirect observation ("Understanding Human Behavior," n.d.). Indigenization is the adoption of an existing indigenous knowledge and adjusting it to make it suitable for the new culture (Adair, 1996). Human cognition refers to mental activities that allow individuals to process, understand, perceive, and learn (Sternberg & Sternberg, 2012).

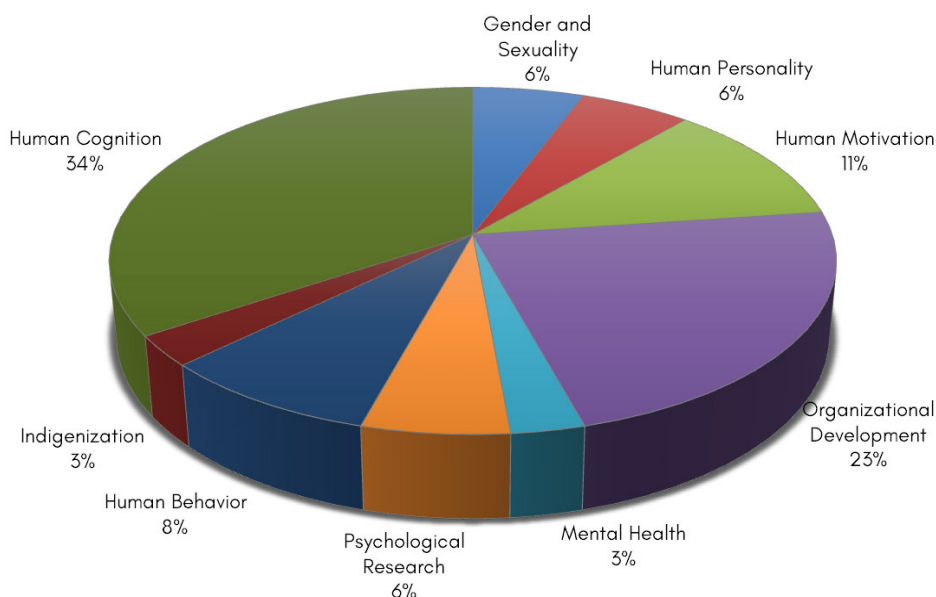
Articles using behavioral science concepts were also categorized according to the different subfields of public administration (Figure 4). In this study, the subfields used as categories are the field of specializations offered by the UP-NCPAG: organization studies, public enterprise management, public policy and program administration, voluntary sector management, spatial information management, and local governance.

Most (27) of the articles that adequately used behavioral science concepts were categorized under organization studies. This result suggests that PA scholars were interested on how individuals and groups interact and how these interactions affect the overall performance of an organization. Likewise, certain factors, such as organizational structure, culture, commitment, and satisfaction, among others, may have encouraged scholars to delve into this subfield.

Meanwhile, five articles related to public policy and program administration adequately used behavioral science concepts. These articles mainly used theories and concepts from psychology to explain nuances in programs and projects and to further the need for support of public initiatives. Two articles related to voluntary sector management discussed prosocial behavior and subjective wellbeing in volunteering. One article in the field of public enterprise management discussed performance evaluation. No articles using behavioral science concepts were tagged under spatial information management and local governance.

Results of categorization based on subfields of PA are consistent with the study of Grimmelikhuijsen et al. (2017), which found that most

Figure 3. Percentage of articles that adequately use behavioral science concepts, by field/concept





psychology-informed articles from three European and American journals analyzed in the study are related to organization studies. This result suggests the usefulness of behavioral science in organization studies. Industrial and organizational psychology, both subfields of psychology, adopt principles similar to that of organizational studies.

In a span of 30 years, the number of articles that adequately used behavioral science concepts or theories from 1990 to 2019 is shown in Figure 5. At least 35 of the 364 journal articles published in *PJPA* adopted behavioral science concepts or

theories. The highest number of behavioral science-related articles were published in 1992 and 1994 with three entries. No articles used behavioral science concepts in the years of 1993, 1999, 2002, 2003, 2007, 2010, and 2017. The fluctuation of number of articles using behavioral science concepts within the period deviates from the findings of Grimmelikhuijsen et al. (2017), which noted an increasing trend of behavioral approach in PA researches. Meanwhile, at least 53 articles in *PJPA* within the period 1990–2019 superficially used behavioral science concepts (Figure 6).

Figure 4. Number of PJPA articles adequately using behavioral science concepts in PA research, by PA subfield, 1990–2019

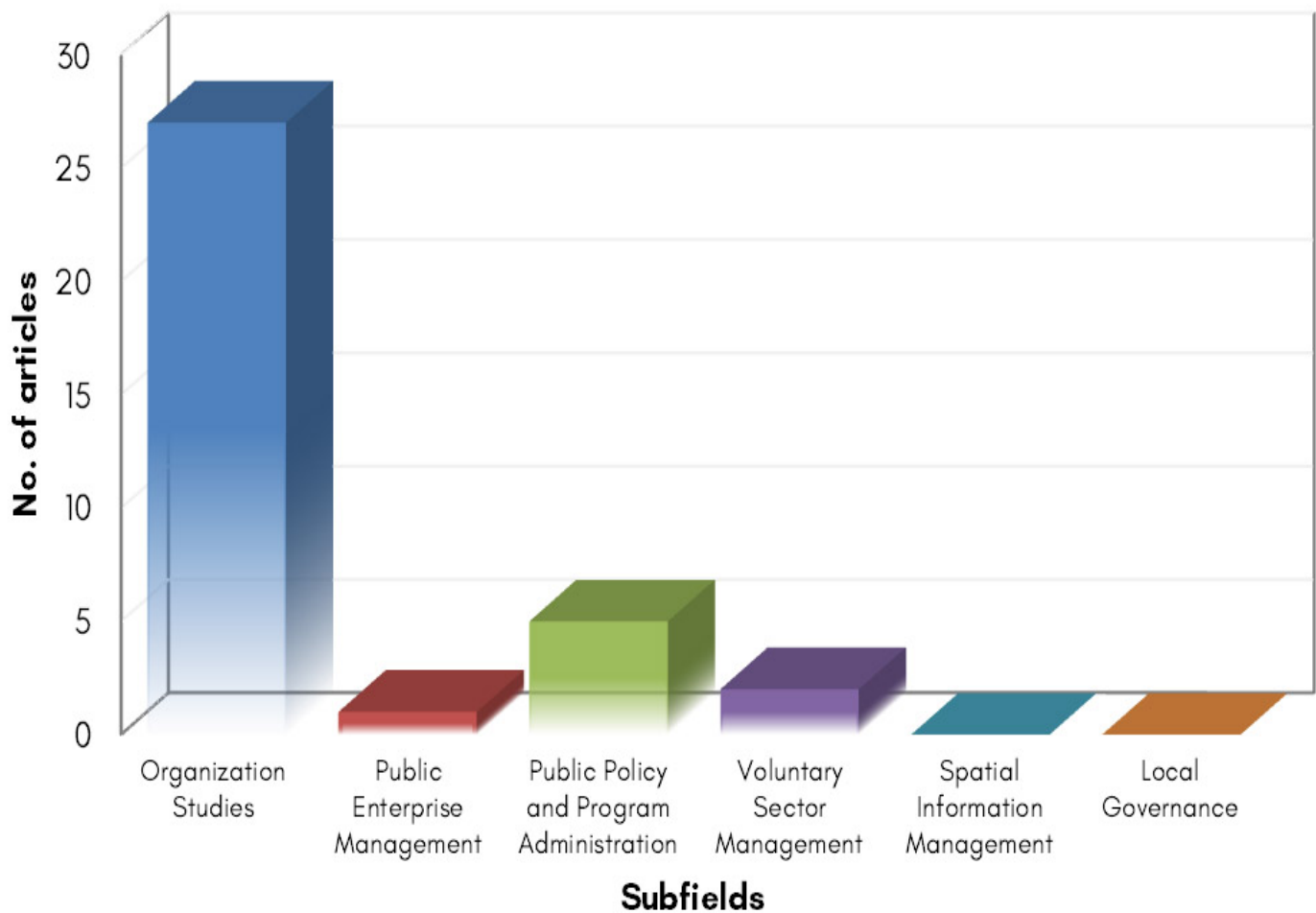


Figure 5. Number of PJPA articles from 1990 to 2019 adequately using behavioral science concepts, by year

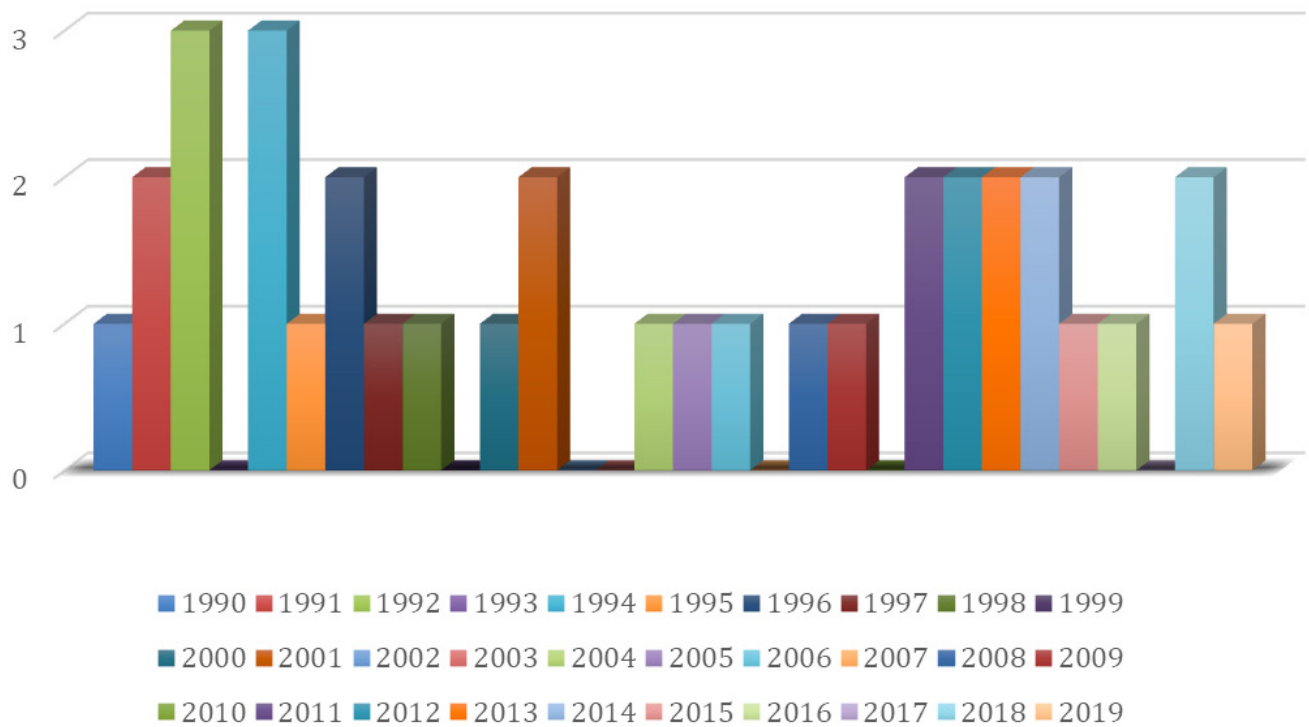
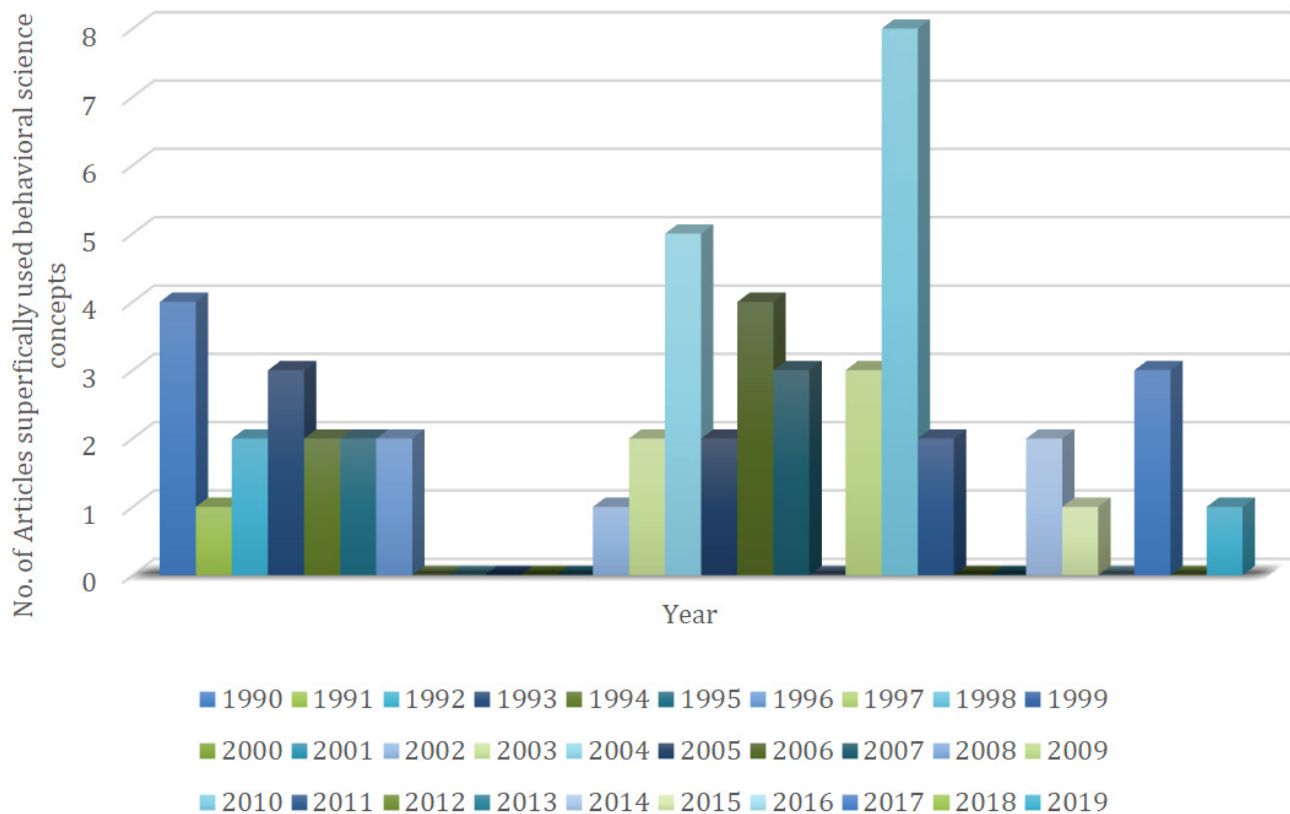


Figure 6. Number of PJPA articles from 1990 to 2019 superficially using behavioral science concepts



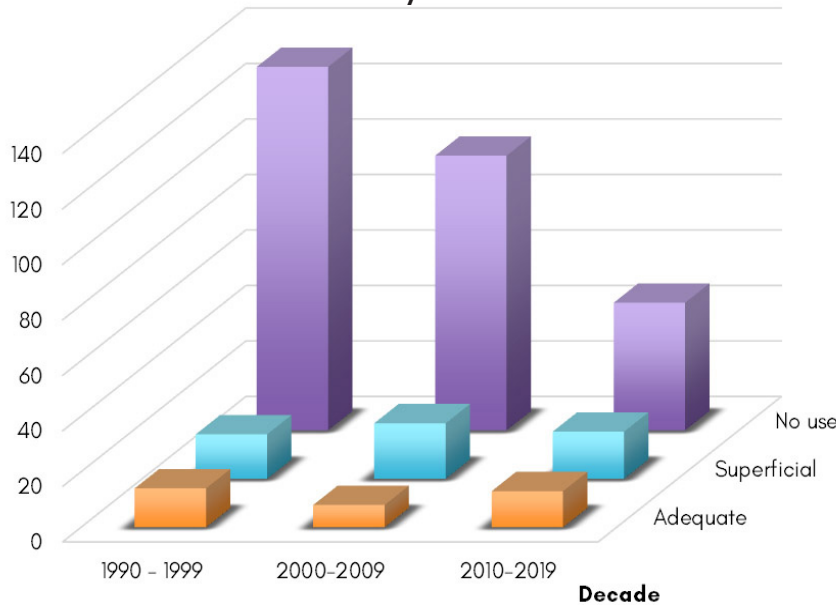
The varying degrees of application of behavioral science concepts and approaches in *PJPA* articles in the three-decade period were presented in Figure 7. Most articles analyzed in this study did not apply behavioral science concepts. Most articles adequately used behavioral science concepts in the 1990–1999 period, while only few were published from 2000 to 2009. Most articles superficially adopting

Ilgalinos, 2016; Quah, 2010; Brillantes & Fernandez, 2010).

As regards the sex of the scholars who adequately used behavioral science, 58.1% of the 35 *PJPA* articles considered in this study were written by male scholars (Figure 8).

Most (10) articles written by male authors were published in the years 1990–1999, while few (6) articles written by male authors were published in the years 2000–2009. More male scholars (58%) than females wrote articles that superficially used behavioral science concepts (Figure 10). These trends are consistent with the previous studies that indicate that more males incorporated behavioral science concepts and approaches in PA research (See Tummers et al., 2016; Grimmelikhuijsen et al., 2017; Olsen, et al., 2018).

Figure 7. Number of PJPA articles from 1990–2019 using behavioral science concepts, by decade



behavioral science concepts were published in the 2000–2009 period, while only a few were published from 1990 to 1999. These findings suggest that the *PJPA* articles are gaining increasing relevance in the behavioral sciences throughout the three-decade period.

This study also notes some important observations that could partly explain the limited number of published articles using behavioral science concepts during the three-decade period. In the years 1990–1999, most of the authors of the *PJPA* articles were focused on politics, health-related concerns, bureaucratic reforms, and corruption (See Tancangco, 1990; Tapales & Alfiler, 1991). In the following decade, 2000–2009, the authors were more inclined to decentralization, federalism, regulatory issues, and poverty (See Poblador, 2000; Ocenar et al., 2004). From 2010 to 2019, authors concentrated on topics related to planning and budgeting, education, corruption, and politics (See

Figure 8. Number of authors of PJPA articles from 1990–2019 adequately using behavioral science concepts, by sex

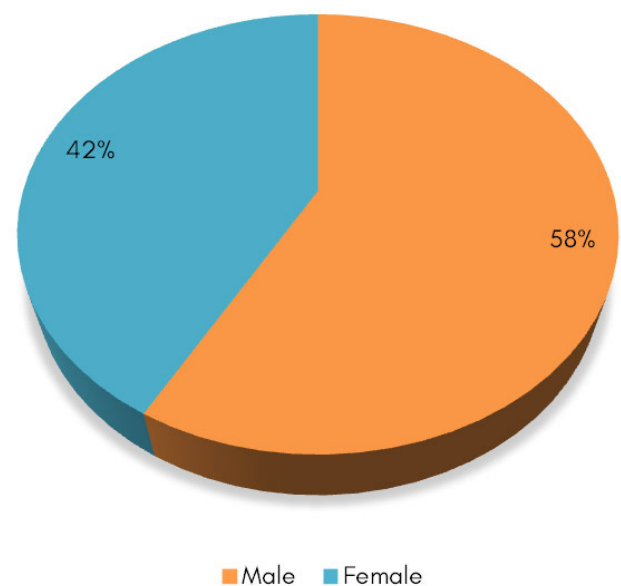


Figure 9. Number of authors of PJPA articles from 1990-2019 adequately using behavioral science concepts, by sex and decade

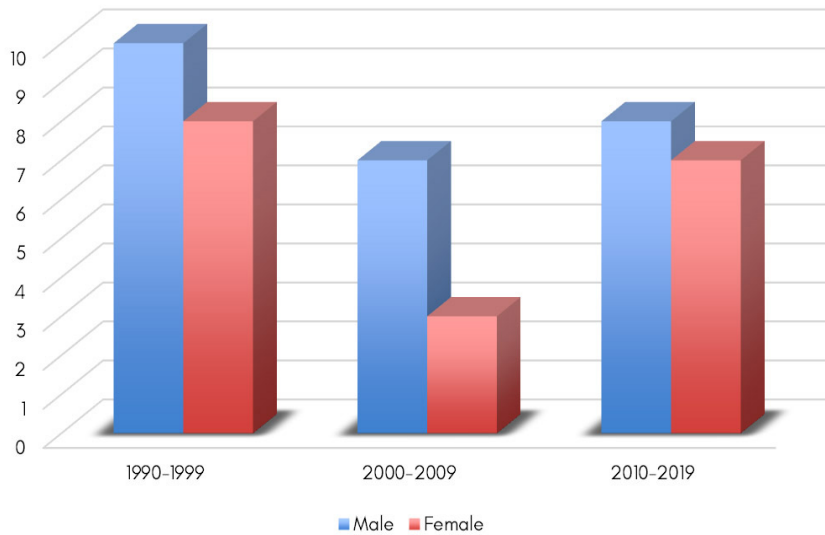


Figure 10. Number of authors of PJPA articles from 1990-2019 adequately using behavioral science concepts, by sex

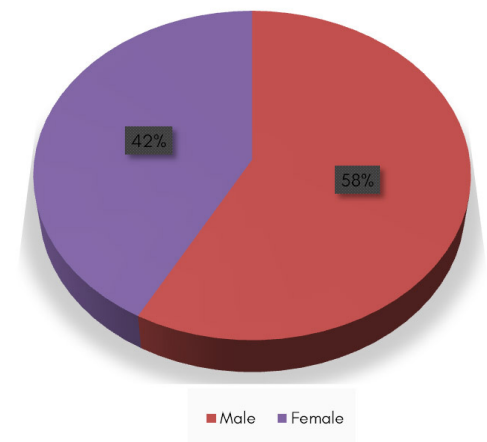
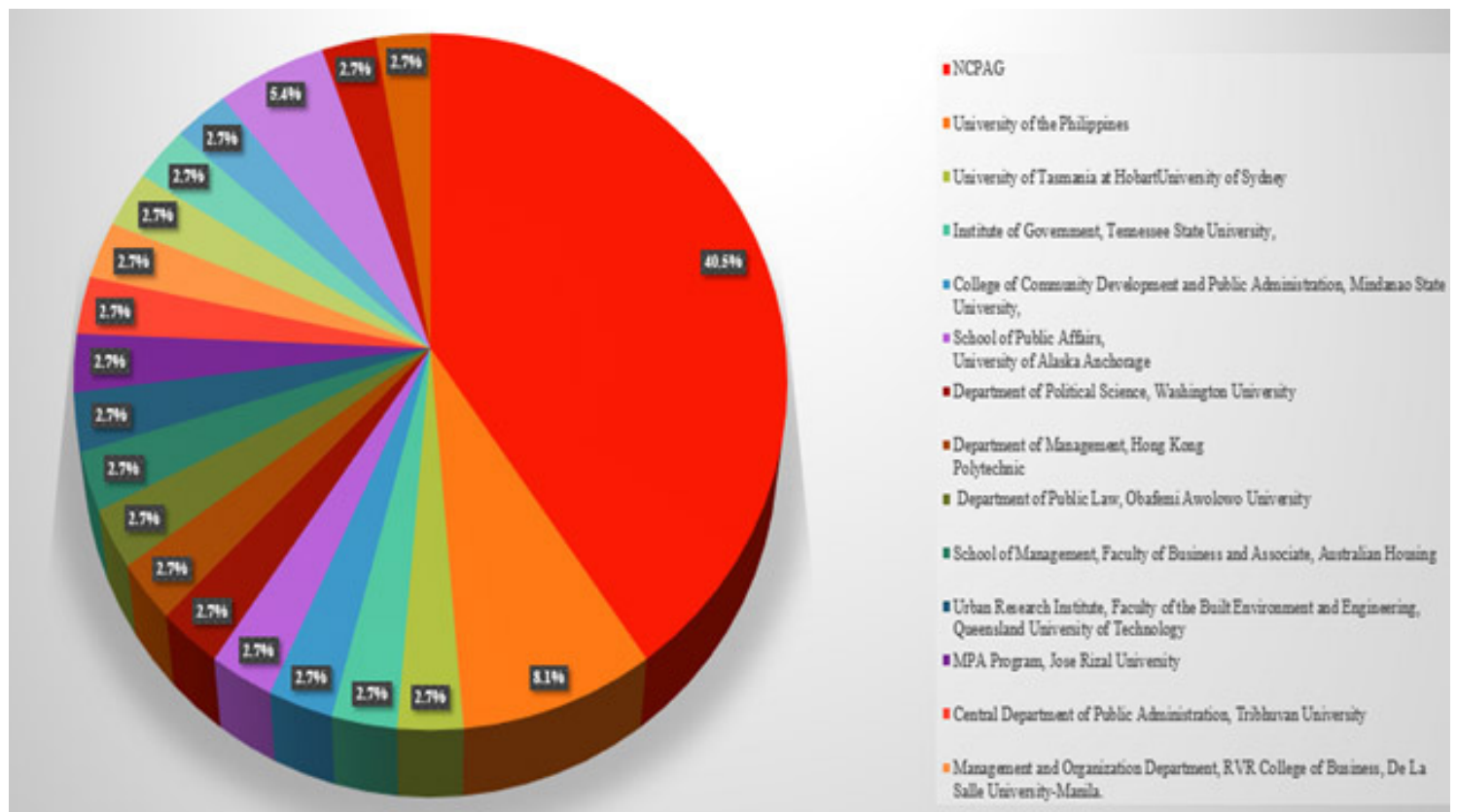


Figure 11. Percentage distribution of authors of PJPA articles from 1990-2019 adequately using behavioral science concepts, by institutional affiliation



Meanwhile, 40.5% of the authors of articles that adequately used behavioral science concepts were affiliated with the National College of Public Administration and Governance of the University of the Philippines (NCPAG) (Figure 11), while the rest were affiliated with other local and international

institutions. The large percentage of NCPAG-affiliated authors may be due to the fact that *PJPA* is an NCPAG-based journal. This percentage distribution is almost similar for articles that superficially used behavioral concepts (Figure 12).

Figure 12. Percentage distribution of authors of PJPA articles from 1990-2019 superficially using behavioral science concepts, by institutional affiliation

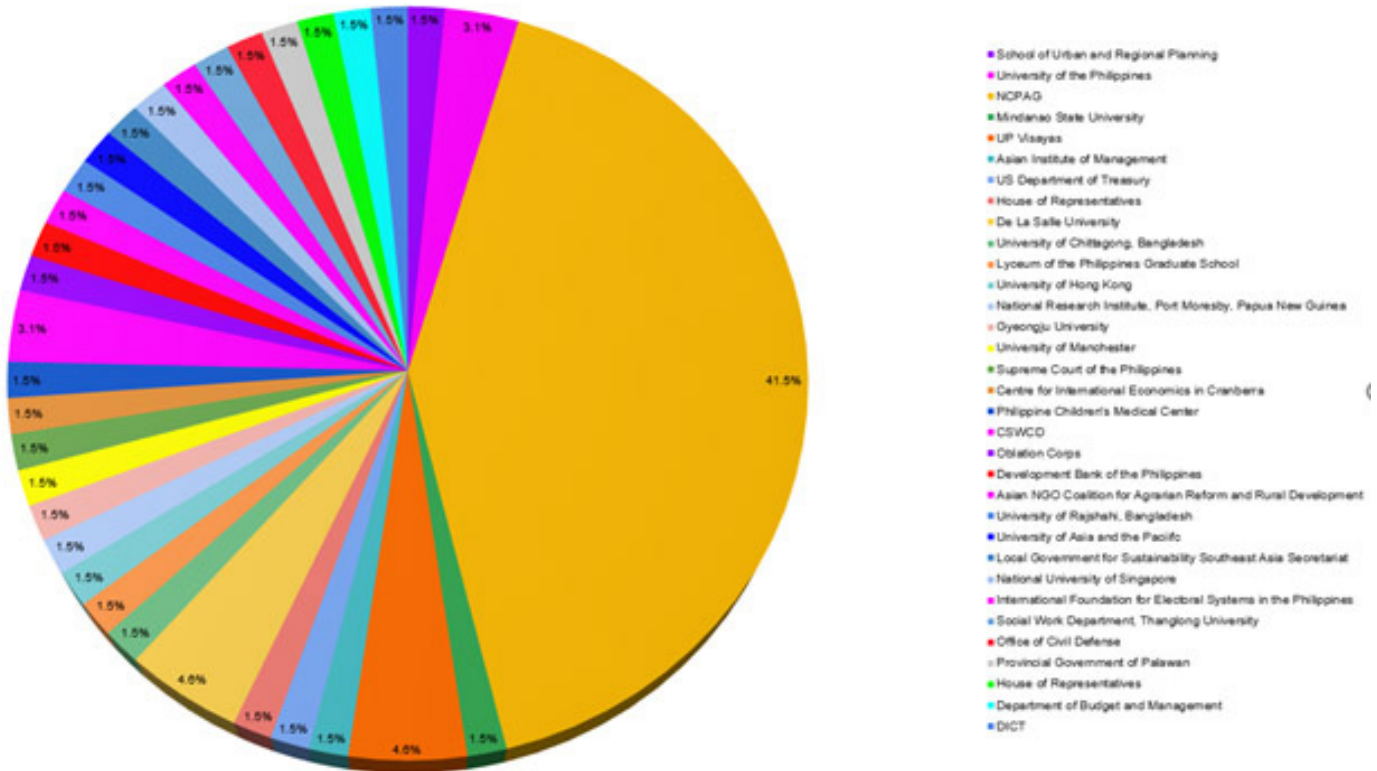
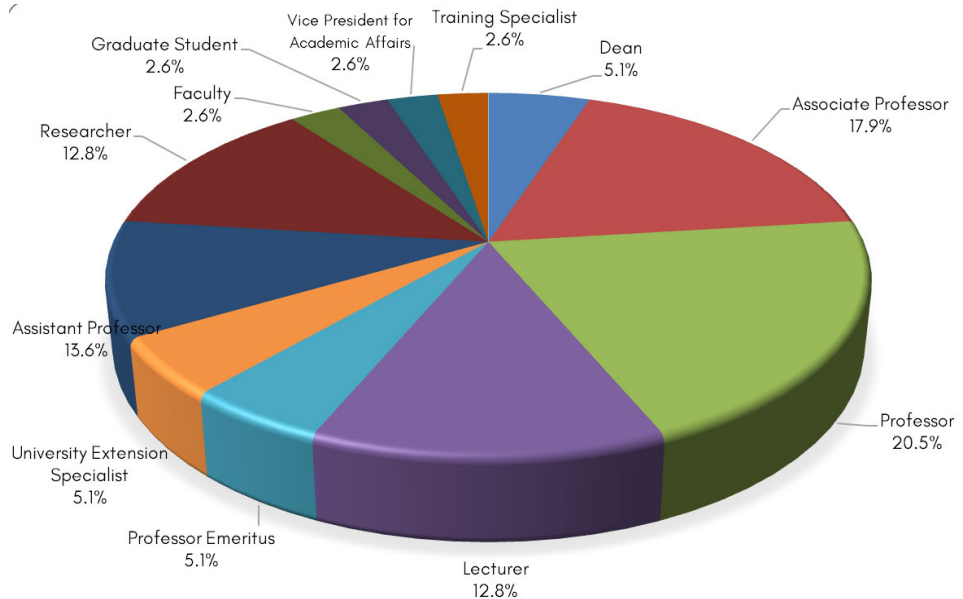


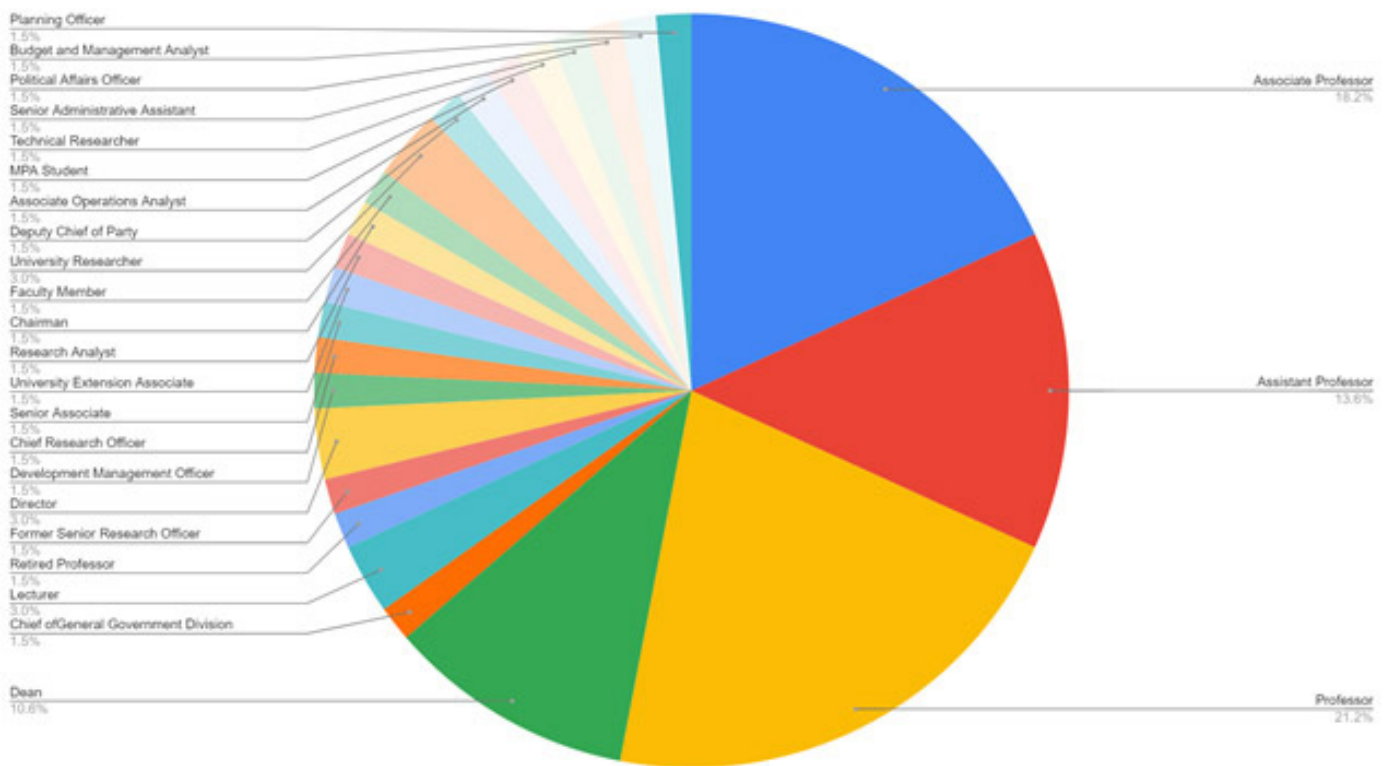
Figure 13. Percentage distribution of authors of PJPA articles from 1990-2019 adequately using behavioral science concepts, by profession



Moreover, most authors of the articles that used behavioral science concepts were scholars from the academe (Figure 13). Around 20.5% of them were professors, 17.9% were associate professors, and 12.8% were lecturers and researchers. Other authors (2.6% each) were training specialist, vice president for academic affairs, graduate student, and faculty member. Almost similar percentage distribution is observed for articles that superficially used behavioral science concepts. Around 21.2% of the authors were professors, 18.2% were associate professors, and 13.6% were assistant professors (Figure 14). Other authors were from various organizations in the academe and government (1.5% each). While most authors who use behavioral sciences in their articles

are mostly from the academe, non-academic authors also used this approach in their public administration research.

Figure 14. Percentage distribution of authors of *PJPA* articles from 1990-2019 superficially using behavioral science concepts, by profession



Conclusion

The integration of behavioral approach in PA research is emerging especially in the *PJPA*. The application of behavioral science concepts in these articles is observed in varying degrees across different PA subfields, particularly organizational studies. However, none of the articles substantially used behavioral science concepts. Rather, authors only used them superficially and adequately. The findings of this study also revealed that the number of articles employing behavioral approach in the *PJPA* is limited and the trend is fluctuating over three decades. The Philippines can learn from other countries in the application of behavioral sciences in PA research and, consequently, in actual policymaking and governance mechanisms.

Limitations

Throughout the study, certain limitations were observed. First, aside from the *PJPA*, other journals can be examined to determine how behavioral sciences are integrated in PA research in a wider context in the Philippines. Studies in this regard may be able to gather articles that substantially integrated

behavioral science concepts in PA research. Second, the trend that was shown in the study could not be generalized given the limited data sources and time frame. Third, the trend of use of behavioral science approaches in PA research was the only focus of this study. It did not cover other trends of PA research in the Philippines.

Recommendations

Based on the findings and analysis of the study, the authors came up with some recommendations. The application of behavioral approach in PA should be extended to other subfields such as public policy, e-governance, and local governance. Behavioral science as an approach in public administration should also be strengthened. PA scholars may learn various concepts and theories from behavioral sciences to deepen their understanding of its application to PA.

Future research can expand the data sources by exploring other journals in PA and other related fields to validate the results of this study. Quantitative approaches may also be used to measure the significance of variables used in this study. Future

research may also consider expanding the period covered to include articles published in earlier years of *PJPA*. Finally, there is a need to increase collaboration with the other researchers from both PA and behavioral science to further reinforce the application of this approach in the Philippines.

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