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# **Philippine Academy of Management e-Journal**

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The Philippine Academy of Management e-Journal is an online and open-access peer-reviewed journal that targets a twice-a-year release. As a not-for-profit publication, it does not charge readers access fees nor does it charge authors publication fees. It is supported by the funds generated by PAOM from its membership fees.

The Philippine Academy of Management e-Journal, which recognizes the need for stronger management scholarship in the country, provides opportunities to faculty members, academic staff (especially early-career academics), doctoral students, and other graduate students to have their works reviewed and published. These works come mainly from the proceedings of the annual National Business and Management Conference, which tackles a different theme every year. The themes address relevant issues in the Philippine business and management landscape.

As management scholarship is the main thrust of the PAoM, it provides an avenue for faculty members / academic staff, doctoral students, and other graduate students to hone their research skills by utilizing the PAoM e-Journal as a platform for knowledge sharing and dissemination. It also enables them to expand their repertoire of research publications, thereby helping them advance their academic careers.

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Office Address:  
De La Salle University  
Center for Business Research and Development  
Ground Floor, Faculty Center  
2401 Taft Avenue, Manila, Philippines  
Telephone: 632-465-8939; 632-5244611 local 437 or 149

Website: [www.paomassociation.wordpress.com](http://www.paomassociation.wordpress.com)

Email: [paom@protonmail.com](mailto:paom@protonmail.com)

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## Editors' Note

We are pleased to release the second issue of the PAOM e-Journal, which contains articles based on manuscripts originally submitted to the 4<sup>th</sup> National Business and Management Conference (NBMC), which PAOM co-organized with De La Salle University (DLSU) and Ateneo de Davao University (ADDU); and the 5<sup>th</sup> National Business and Management Conference (NBMC), which PAOM and DLSU co-organized with the Central Bicol State University of Agriculture (CBSUA).

For several years now, the NBMC has been our primary vehicle for encouraging business and management scholarship in the Philippines. With the PAOM e-Journal finally taking off, we can now reinforce our humble gains by adding a venue for the scholarly works of faculty members and graduate students of Philippine business schools. We are grateful for the support given by our pool of reviewers, who had been generous with their time and expertise in giving valuable feedback to our authors.

In this issue, we are happy to feature articles that utilize a variety of research approaches and methods, an indication of the increasing breadth of the expertise that Philippine business schools have developed.

The article of Teehankee and Silapan on academic entrepreneurship utilized a critical realist approach in making sense of the IP commercialization efforts of the University of San Carlos. This approach acknowledges how social phenomena are complex and dynamic and could be better understood by attempting to uncover “underlying causal mechanisms”. According to the authors, this approach “avoids the explanatory limitations of mainstream positivist approaches to the study of academic entrepreneurship.”

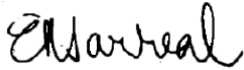
Vergara’s work on crowdfunding is another example of a qualitative case study research, just like the work of Teehankee and Silapan. This research, however, adopted a multiple-case based approach. In his study, Vergara traced the progress of four Philippine-based entrepreneurial ventures that began as crowdfunding projects, the progression of which was compared to Bhavé’s Venture Creation Model. This illustrates the important role of theory in case study research design, one that derives insights not through statistical generalization but through analytic generalization (Yin, 2018).

Yet another qualitative study is Bernardo’s article on sports governance, which featured the case of the Philippine Taekwondo Association. What is worth highlighting in this article is how Bernardo, an athlete herself, was able to gain access to information from the taekwondo community. This is always an important consideration when undertaking qualitative research, especially if it seeks to tackle issues of a sensitive nature. Bernardo’s contribution to knowledge is a conceptual framework for the effective governance of national sports associations, something that she derived from the themes generated from her exploratory / inductive study.

The last two studies are quantitative in nature, both of which utilized statistical analysis, a staple in many business and management journals. Marte and Te’s study on Psychographic segmentation and profiling of millennials was based on survey data collected among the young

people of Davao City; while Bautista's study on the performance of condominium-hotels in Metro Manila utilized publicly available data.

We hope that you find reading this issue of PAOM e-Journal worth your time not only for the articles' contents but also for ideas on research methods that you might want to learn and carry out yourselves.



EMILINA D. SARREAL, DBA  
Editor in Chief, PAOM e-Journal



RAYMUND B. HABARADAS, DBA  
Managing Editor, PAOM e-Journal

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# **Towards explaining academic entrepreneurship: A critical realist analysis of intellectual property commercialization at the University of San Carlos**

**Benito Teehankee<sup>1</sup> and Lauro Silapan<sup>2</sup>**

<sup>1</sup>De La Salle University, <sup>2</sup>University of San Carlos

benito.teehankee@dlsu.edu.ph, lrsilapan@gmail.com

## **Abstract**

The purpose of the research was to use a critical realist philosophy of science to investigate academic entrepreneurship and the causal mechanisms which enable the commercialization of a university-based intellectual property such as a manufacturing process. The paper employed a critical realist case study methodology on the creation of a joint-venture manufacturing company between University of San Carlos, a Catholic university in the Central Visayas region of the Philippines, and external business entrepreneurs. Findings reveal the importance of a conducive environment produced by the institutional entrepreneurship of top university administration combined with the inventiveness and zeal of a faculty researcher in enabling successful invention commercialization. It is recommended that future research look in greater comparative detail at related mechanisms supportive of academic entrepreneurship and the sustainability of such enterprises.

**Key Words:** academic entrepreneurship; critical realism

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## **Background of the study**

Higher educational institutions have traditionally been called upon to fulfill a three-proned mission: teaching, research and community extension. In the past few decades, however, an emerging role for universities, which may be considered an evolution of its community extension role, is the production and commercialization of intellectual products and innovations for the public interest. In the US, this development was partly fueled by the enactment of the Patent and Trademark Law Amendments Act, P.L. 96-517, more commonly known as the Bayh-Dole Act, in 1980 which encouraged the licensing of federally-funded university research to industry for socially beneficial purposes (Friedman & Silberman, 2003).

Pilegaard, Moroz, & Neergaard (2010) defined academic entrepreneurship as:

*the involvement of academic scientists and organizations in commercially relevant activities in different forms, including industry-university collaborations, university-based venture funds, university-based incubator firms, startups by academics, and double appointments of faculty members in firms and academic departments. (p. 46)*



There is scant literature on academic entrepreneurship in the Philippines. The Philippine Technology Transfer Act (RA 10055) was only passed in 2009. In one of the rare local investigations into this area, Javier (2011) analyzed the role of academic entrepreneurship in the University of the Philippines-Los Baños. Based on a review of the literature, he recommended four strategies for the university to be more entrepreneurial. First, the university needs to rethink its basic intersection with society so that knowledge creation, generation and application can be collectively implemented to answer societal needs. Secondly, the university needs to enhance the marketing functions of its various entrepreneurial offices so that these can pro-actively engage in the marketing of university technical expertise. Thirdly, the university needs to pursue innovative administrative process in support of entrepreneurship by simplifying and communicating processes to faculty and staff in order to motivate them to generate and create knowledge. Finally, the university needs to open new academic markets for its knowledge, products and services. This needs to be done within a geographical distance where the university has no presence but where its expertise is needed.

Habaradas (2008), reflecting on the experiences of Malaysia and Thailand in implementing their national innovation systems, provided some recommendations for the Philippine case which may have some relevance for academic entrepreneurship. He argued that visionary leadership is critical in developing a national innovation system. He cited the example of Malaysia's Prime Minister Mahathir bin Mohamad in galvanizing the country by driving a number of cutting edge and high profile projects such as its modern airport, national car and the Multimedia Super Corridor. He likewise cited the Thai practice of focusing its accelerated innovation strategy on a few priority areas, namely, bio-business, energy and environment. He contrasted this with the Philippines' 12 priority areas. By implication, a strong message from Malacañang on selected core areas for innovation can inspire higher education institutions to focus academic entrepreneurship efforts high-impact areas given the country's limited resources.

Much more needs to be done if academic entrepreneurship is to be understood and to flourish. Pilegaard, Moroz, and Neergaard (2010) argued for a more fine-grained analysis of what actually happens within universities and among key actors during the process of academic entrepreneurship:

*... we must refocus our research efforts on how academic entrepreneurship takes place by understanding the relationship between process and the heterogeneous socio-spatial environments where entrepreneurship happens. In other words, we need to understand the persons involved in academic entrepreneurship, their interaction with their environment, and how both persons and environment change over time. (p. 46)*

This is supported by Rasmussen (2011) who argued that more process-oriented theories can lead to a more holistic understanding of academic entrepreneurship. He observed that theories of university spinoffs often used deterministic stage models which assume that the environment is predetermined. Such positivist studies often employed statistical techniques to identify causal drivers of academic entrepreneurship (Yusof, 2009) without surfacing mechanisms which explicitly explain the proposed relationships, leading to weak theories (Dyer & Wilkins, 1991; Shepherd & Suddaby, 2017). Rasmussen recommended the adoption of a critical realist perspective in order to move beyond the limitations of deterministic, positivist stage models. This

approach simultaneously considers the influences of both actors' actions and the deep structures in which they are embedded.

This study aimed, firstly, to investigate the case of a joint venture spinoff of a mango waste processing enterprise, Green Enviro Management Systems, Inc. (GEMS), by the University of San Carlos in Cebu. The university's share in the venture is a patented process technology developed by one of its faculty members, Dr. Evelyn Taboada, with university support. Secondly, following Rasmussen (2011), the study aimed to use a critical realist approach to explore and understand the underlying causal mechanisms that enabled the formation of GEMS. This approach avoids the explanatory limitations of mainstream positivist approaches to the study of academic entrepreneurship.

The research inquired into the following questions:

1. How was the technology developed? What was the chronology of events and who were involved?
2. What support from the university made the technology development possible? Other support?
3. What were the challenges in developing the technology? How were these overcome?
4. How did the joint-venture business develop? What was the chronology of events? What support from the university led to the organization of the venture?
5. What were the challenges in organizing the venture? How were these overcome?
6. What systems and processes within the university made the venture possible?
7. Who were the key actors in the organizing of the venture? What were their roles?

## Review of literature

### Academic entrepreneurship

Rothaermel, Agung and Lin (2007) classified the literature on academic entrepreneurship from 1981 to 2005 into four major research streams: entrepreneurial research university, productivity of technology transfer offices, new firm creation, and environmental context including networks of innovation (p. 691).

Academic entrepreneurship is a challenge for administrators and faculty in higher education because institutional values and university arrangements are not typically aligned with the risks and profit-seeking that are inherent in commercial ventures. For this reason, there has been increasing research interest in the phenomenon of academic entrepreneurship in the last few decades, especially evidenced by special journal issues of *Management Science*, *Journal of Technology Transfer*, *Research Policy* and *Journal of Business Venturing* (Yusof & Jain, 2010). Shane, one of the leading scholars in entrepreneurship (Shane & Venkataraman, 2010), has particularly called attention to the role of university spinoffs which is "a new company founded to exploit a piece of intellectual property created in an academic institution" (Shane, 2004, p. 4).

Louis, Blumenthal, Gluck, & Stoto (1989) investigated academic entrepreneurs in the life sciences and categorized them into five types: (1) engaging in large-scale science (externally

funded research), (2) earning supplemental income, (3) gaining industry support for university research, (4) obtaining patents or generating trade secrets, and (5) commercialization (forming or holding equity in private companies based on a faculty member's own research). Local norms were found to be a strong predictor of academic entrepreneurship. Interestingly, they found little influence by individual characteristics and supportive university policies and structures on academic entrepreneurship. They did speculate that the latter finding may have been overwhelmed by the impact of local norms which may have been themselves the result of structures and policies not covered in their study. In any case, they suggested that institutions cannot easily engineer entrepreneurship. Based on their findings, they hypothesized that the influence of individual characteristics on academic entrepreneurship is moderated by institutional location, particularly at the level of department or division.

Hayter (2015) similarly studied the motivations of academic entrepreneurs and found that they are motivated by different but related reasons and that spinoffs are viewed as a way to pursue awards and consulting opportunities that can support academic teaching and research responsibilities.

In analyzing a successful case of an academic spinoff, Pilegaard, Moroz, and Neergaard (2010) showed “the importance of bridging innovation ... to balance research and commercial goals, and the need for codifying knowledge capacities and creating new or changing existing institutional structures to legitimize and facilitate entrepreneurial activity” (p. 46).

In Asia, the role of academic entrepreneurship has been linked to national innovation and development systems as a whole. Wong, Ho & Singh (2011) studied several higher education institutions across several Asian countries at various stages of development, namely Japan, Korea, Singapore, Taiwan, China, India, Malaysia and Thailand. They observed that a key driver of technology commercialization was the greater push of governments for academic institutions to engage with industry especially in the area of technology. Secondly, they noted that Asian universities have initially tended to copy parallel practices in leading North American universities although some have begun to adopt more refined localized practices.

Despite the above broad insights on drivers of academic entrepreneurship (Friedman & Silberman, 2003; Wong, 2011), it has not flourished as widely as expected. Some researchers have looked deeper into specific leadership dynamics within the institutions themselves. Among Malaysian public research universities, for example, Yusof (2009) found that entrepreneurial behavior among academic leaders can be an enabler of academic entrepreneurship, especially when these leaders apply their entrepreneurial mindset in supporting commercialization opportunities. This is consistent with findings on institutional entrepreneurship where leaders create new social arrangements in order to cause a shift in practices (Leca & Naccache, 2006).

### **Critical realism and the development of theoretical explanations**

This study adopts critical realism (CR) as a philosophy of science for theory development. Critical realism adopts a realist ontology which posits that a “world exists independently of our knowledge of it” (Sayer, as cited in Easton, 2010, p. 119; Miller & Tsang, 2010, p. 144). Unlike positivism which rejects metaphysical and constructivist as well as value-laden ideas, critical

realism embraces a fallibilist epistemology wherein the researcher's knowledge of the world is socially constructed (Miller & Tsang, 2010; Krauss, 2005) as in interpretivist research. Tsoukas (1989) was among the earliest to argue for the validity of critical realist theoretical explanations based on case studies within the management and organization field while Tsang (Miller & Tsang, 2010; Tsang, 2010) is among the most consistent recent advocate.

Tsoukas (1989), explained that CR does not aim for empirical or statistical generalizability in theories. Rather, CR-based theories "deal with necessity, namely with the workings of real social structures and their causal capabilities, irrespective of their individual manifestation in the domain of experience. Thus, the causal powers are externally valid, but their activation is, and thus their effects are, contingently determined" (p. 557). Thus, CR does not seek empirical generalizability and moves away from the deontological-nomological (D-N) norm of deducing hypotheses from existing literature for empirical testing.

CR is a relatively new approach in the study of management and organizations (Edwards, O'Mahoney, & Vincent, 2014; Fleetwood & Ackroyd, 2004; Ackroyd & Fleetwood, 2000). The study of Easton (2010) showed that only 2 of the 334 papers he reviewed employed the case study research method and critical realism as a philosophical stance. Although CR is a relatively new philosophical paradigm, this orientation has been adopted in economics, religious studies, history, environmental studies, information studies, sociology, psychiatry, criminology, geography, linguistics, social work, media studies, interdisciplinary studies, and marketing (Easton, 2010).

In critical realism, the basic theoretical building block is the entity which can be the organization, people, relationships, attitudes, resources, inventions, human, ideas, and technology, among others. The use of entities implies causal language, i.e., entities used for explanatory theories are considered to be causal mechanisms. According to Sayer "to ask for the cause of something is to ask 'what makes it happen', what 'produces', 'generates', 'creates', or determines' it, or more weakly, what 'enables' or 'leads to' it" (as cited in Easton, 2010, p. 120). Research methods that are apt to use such paradigm include case study research with the use of qualitative data. However, CR accommodates quantitative data as empirical evidence as part of 'extensive' research designs which can serve as starting point for developing theoretical explanations (Sayer, 2010)

The external or visible behaviors of people, systems, and things as they occur, or as they have happened, are what critical realists investigate. These are called events or outcomes which call for close attention to accounts of processes that "produce and reproduce the ordering of events and social institutions" (Easton, 2010). Thus, CR pushes for contextualized explanations with "a very particular view of causality as a complex and dynamic set of interactions that are treated holistically" (Welch, Plakoyiannaki, & Paavilainen-Mantymaki, 2011, p. 754).

Structure is an important element in critical realism research as it clarifies the "set of internally related objects or practices" (Easton, 2010). Structures may be nested or embedded within structures.

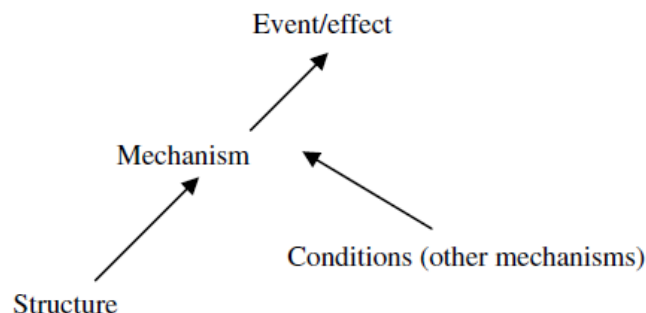
Blundel (2007) advocated for CR as an appropriate mode for conducting entrepreneurship research. He argued that:

1. CR can promote much-needed contextualization of entrepreneurial phenomena in research studies;
2. CR can facilitate greater theoretical integration between disciplines and across multiple levels of analysis;
3. CR can enhance the explanatory potential of existing qualitative research techniques, including the case study approaches; and
4. as a consequence, CR has the potential to contribute more ‘useful’ knowledge than rival paradigms. (p. 58)

Ramoglou and Tsang (2016) applied a CR-based actualization approach to develop a propensity theory of entrepreneurship. Their theory departs from the dominant “discovery approach” which defined entrepreneurial opportunities as “those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production” (Casson as cited in Shane & Venkataraman, 2000, p. 220). They also differ with the recently emerging “creation view” which argues that entrepreneurial opportunities “are not separate from the individuals that form them” (Alvarez, Barney, McBride, & Wuebker, 2014, p. 229) and “do not exist objectively but are actively created through subjective process of social construction” (Ramoglou & Tsang, 2016, p. 410). In contrast, Ramoglou & Tsang (2016) define entrepreneurial opportunity as “the propensity of market demand to be actualized into profits through the introduction of novel products or services” (p 416).

Vincent and Wapshott (2014) explained the important role of the case study in implementing a critical realist research methodology, especially in explaining organizational mechanisms. Exploratory case studies, in particular, aim to discover the consequences of a specific organization development on a specific level of organizational reality.

Sayer (as cited in Blundel, 2007) depicted the critical realist view of causation in Figure 1. Structured entities generate causal mechanisms which in turn bring about events. This causal relationship is not deterministic, however, as their actualization depends on other conditions or mechanisms which may happen to be active in the situation.



*Figure 1. The critical realist view of causation*  
Source: Sayer, as cited in Blundel (2007, p. 52)

## **Methodology**

This study adopted an explanatory case study design using a critical realist philosophy of science to identify (retroduce) causal mechanisms related to the formation of the GEMS joint venture enterprise emanating from academic research conducted in the University of San Carlos. It is a study of a single case (i.e., GEMS) that investigated the academic entrepreneurial process. The study aimed to identify causal mechanisms that encouraged or constrained the formation of GEMS.

A case study research method is one that involves the in-depth study of one or more cases to understand the nature of a phenomenon (Yin, 2009; Easton, 2010; Eisenhardt, 1989). The method may involve mostly qualitative data but may also include quantitative data. The critical realist perspective supports case study research (Easton, 2010) as it unearths and tries to explain a phenomenon through the study of a single case in depth and comprehensively. Yin (2009) proposed the use of how and why questions in case study research which demonstrates the nature of its explanatory goal.

Academic entrepreneurship is extremely rare in the Philippine setting, making a case study approach all but necessary. Fortunately, a CR approach enables the derivation of meaningful causal findings using a case study approach.

### **Data gathering procedure**

The principal source of data is a semi-structured interview with Evelyn Taboada as the academic entrepreneur and inventor of the patented manufacturing process licensed to GEMS by the university. The interview was held in May 2016. A site visit of the GEMS manufacturing facility enabled the researchers to observe the manufacturing process first hand.

### **Analytic procedure**

The study implemented a critical realist methodology which employed retroduction as the core analytic activity as part of its explanatory research process.

The explanatory research process described by Danermark et al. (as cited by Blundel, (2007) in Table 1 served as a guide. As Blundel (2007) explained, the process is not prescriptive nor strictly linear. This study mainly employed Activities 1 to 4.

Table 1  
*An explanatory research process involving retroduction*

Activity	Nature of activity
1: Description	Prepare a description of the phenomenon, making use of actors' accounts and a variety of other sources
2: Analytical resolution	Distinguish various components, aspects or dimensions of the phenomenon and establish (tentative) boundaries to the components studied.
3: Theoretical redescription	Interpret and redescribe the different components, applying contrasting theoretical frameworks and interpretations in order to provide new insights (n.b. this activity is sometimes referred to as 'abduction').
4: Retroduction	For each component, seek to identify basic, or 'transfactual' conditions, including structures, causal powers and mechanisms, that make the phenomenon possible.
5: Abstract comparison	Elaborate and estimate the explanatory power of the structures, causal powers and mechanisms that have been identified during activities 3 and 4.
6: Concretization and contextualization	Examine how different structures, causal powers and mechanisms manifest themselves in concrete situations.

Source: Danermark et al. (as cited in Blundel, 2007, p. 8)

The diagramming method for representing the structure of causal explanations developed by Sayer (2010) was used to summarize the result of retroduction (Figure 2). The diagram, which is a conceptual detailing of Figure 1, depicts various components of a critical realist causal explanation: an object (X) with structure (S) which endows the object with causal powers (p) and liabilities (l) to yield a causal mechanism which, under specific conditions (c), trigger the events (e) manifesting as the phenomena under study. The focal phenomenon in this paper is the formation of GEMS.

The main causal object for the study will be the academic entrepreneur. Necessary relations refer to effects which are deemed naturally emanating from the causal object due to its nature and structure. Contingent relations refer to effects that are only actualized depending on the triggering presence of specific conditions in the situation under study. When such contingent effects are triggered, the event comes about and manifests as observable phenomena.

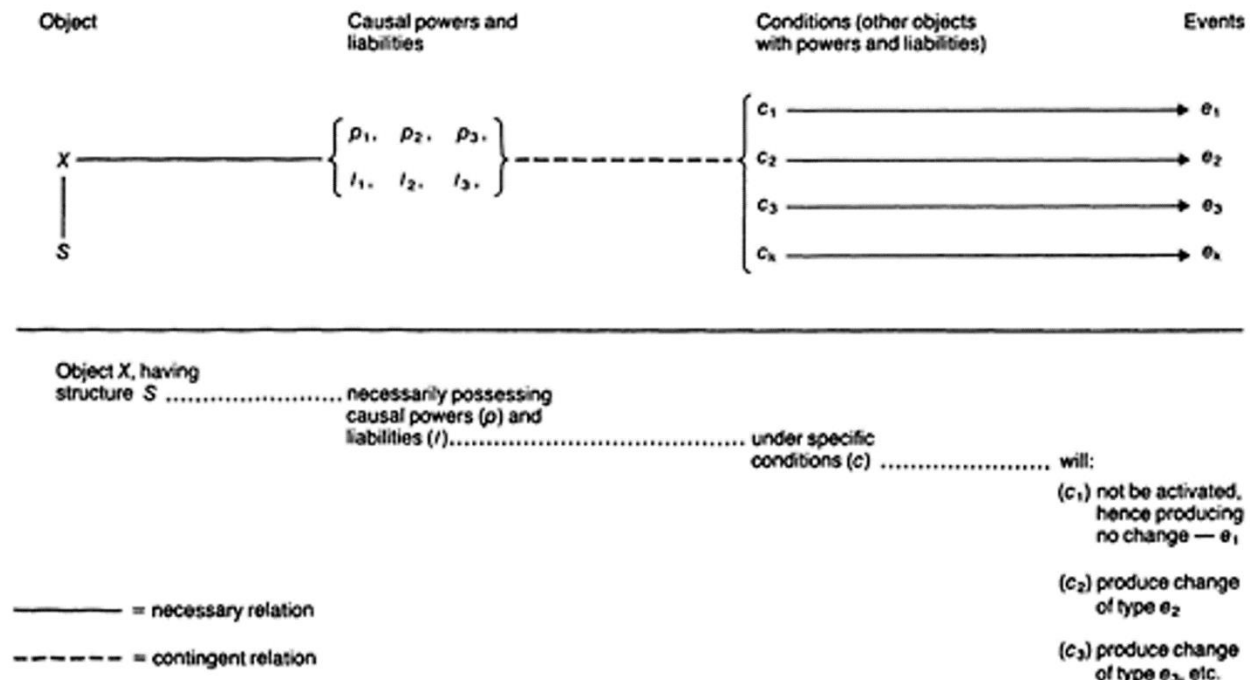


Figure 2. The structure of a causal explanation  
Source: Sayer (2010, p. 74)

## Limitations

This study is based mainly on the account of Evelyn Taboada. The explanatory emphasis was limited to Activities 1 to 4 in the process described by Blundel (2007), with the other activities being recommended for future research.

## Findings and discussion

### Profile of the university

The University of San Carlos (USC) is a private research and Catholic university in Cebu City which has been administered by the Society of the Divine Word since 1935. It provides basic education, undergraduate and graduate studies higher education for more than an estimated 27,000 students. It is the biggest university in Cebu City with five campuses distributed around the city.

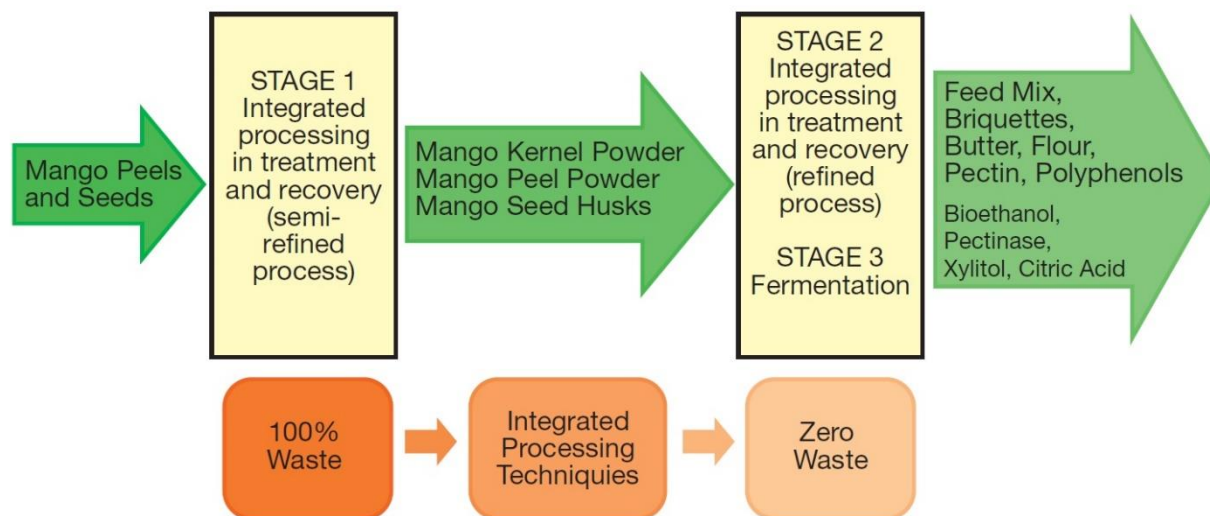
### Profile of the academic entrepreneur

Evelyn B. Taboada is Dean of the College of Engineering and a professor of chemical engineering at the University of San Carlos in Cebu City. She was twice conferred the World Intellectual Property Organization (WIPO) gold medal for investors and Outstanding Engineering Achievement Award from the ASEAN Green Award (Rodrigo, 2017). She obtained her BS in chemical engineering from USC, her MS in chemical engineering from the University of the Philippines and PhD in biochemical engineering from Delft University of Technology



(Netherlands). She has a Master of Laws in Intellectual Property degree from the University of Torino (Italy) and is a registered and practicing patent attorney

Taboada holds patents for technologies related to the treatment of fruit wastes. The process which she invented with USC support and commercialized through GEMS is depicted in Figure 3.



*Figure 3.* The Taboada-USC zero-waste process turns mango waste to valuable products  
Source: Hlaing, Taboada, Bendik-Keymer, & Lacks (2015, p. 48)

### Profile of the business

GEMS is a partnership between USC and a group of 3 investors. There is a board which is composed of USC representatives and the other partners. The management team is composed of a plant manager and Taboada as Chief Operating Officer (COO) and Chief Technical Officer (CTO). In the 5-member board, there are two representatives from USC: Taboada and USC administration representative, Fr. Rebayla. The other 3 seats are held by the 2 private partners but 1 is non-voting.

For the partnership, USC did not shell out cash but contributed the intellectual property, technology, and Taboada's and her team's technical expertise and time. The private partners provided the funds.

*Production facility and Marketing* Of the 7 product types, only 4 were produced. Special pieces of equipment are needed for the production of the other 3 products. The initial products created in 2012 underwent modifications and enhancements. The products coming out of the plant now has improved efficacy and overall product quality.

Plant capacity is 100 tons but utilization at the moment is only at 30%. There are 80 fulltime employees. Production is influenced by the availability of raw materials. As soon as the materials arrive at the plant, they are processed immediately. Taboada said, "we want to do it stage by stage

based on the collection of materials, which should be fresh. We have a window of 3 days maximum within which to process the raw materials or else the materials deteriorate. They have to be fresh”. ‘Process quickly while the raw materials are fresh’ is their production mantra. After processing, the semi-processed product can be stored for 2 years at normal room temperature (shelf life).

At this stage, the business focus is marketing which is “the most difficult part for me because it is a new product”, according to Taboada. “We need to raise the level of awareness of the people and go into advocacy.”

*Plant Operations* Power consumption is relatively high with the plant operating 7 days a week, 24 hours (i.e., 24/7). Since the plant relies also on power generated from the solar panels and direct solar heat from the panels, monthly power bill is reduced dramatically to 10-20% of original costs. Solar power generation was also increased by adding solar panels, module by module.

The long processing time requires operating the facility for 24 hours. There are three shifts. The night shift has a ‘skeletal’ force to perform only the most crucial processes.

There is a viewing deck where visitors can observe the operation. GEMS is strictly implementing good manufacturing practice (GMP). There is open-viewing of the drying facilities.

### **The process of establishing GEMS**

The following narrative description is based on the interview with Taboada.

*How did GEMS start?* The journey toward the establishment of GEMS started with the problem on waste. Taboada saw truckloads of mango waste dumped daily at dumpsites in Omapad, Mandaue, Consolacion, and Inayawan in Cebu City. There were 10-20 truckloads of waste dumped in these dumpsites every day. These obviously came from existing processing plants. She recalled that even scavengers eat some portions of the waste. The waste materials because of their very nature attract flies, pests, and other micro-organisms. Some mango processors approached her if she could handle this problem.

Initially, Taboada’s motivation was how to do render the waste less “hazardous”. As a chemical engineer, this kind of problem posed a challenge. In 2007-2008, the investigation on the mango waste became part of her research deloading project. The research proposal came under the scrutiny of the university Research Director for institutional funding approval. It came as an opportunity as the priority research project.

One of the first experiments in the USC laboratory reduced 1 kilo of waste mango peel and seed to zero. This meant that all the wastes were converted to some products.

Within the same year, Taboada attended a basic patent course by the Intellectual Property Office of the Philippines (IPO PHL) held at USC. After the course, it dawned on her that the outcomes of the research project were patentable.

A follow through of the patent course was an invitation to apply for a Master of Law course in intellectual property at the University of Turin in Italy sponsored by the World Intellectual Property Organization (WIPO), a UN agency. This stirred a strong interest in her as it was designed for professionals (engineers, scientist, doctors, and lawyers). She applied in February 2010 for fellowship. She was accepted in May and immediately left for Italy. The program which could be completed in a year involved a mixture of learning platforms: distance learning, online, meet up, then thesis, and a possible internship (for top students). There were 40 participants from all over the world: half were lawyers and half were professionals. The youngest was 28 up to 48 years old, mostly practitioners. The professors were experts on IP and interactions between and among participants were very intense. Problems, issues, and challenges involving IP the world over were tackled.

As one of the top students, she was offered an internship at WIPO in Geneva in 2011. The 2-month internship included a study tour and some courses and the chance to stay at the WIPO headquarters in Geneva. This extension of her study was granted under the auspices of USC (with approval from Fr. Miranda). She was assigned at the patent and technology transfer section. The internship exposed her to topics on negotiations, licensing, and raising capital for a startup. This internship exposure cemented in her the resolve to patent earlier works which she did while doing her PhD because most of them were patentable. She recalls that the topic she worked on for her first PhD could have been patented. Her thesis counsellor however advised her not to pursue the patenting route because aside from it being expensive to maintain in Europe, her research output was a seminal one from which further studies to advance science can be drawn.

She went back to USC in 2011 after finishing her internship at WIPO and completing her degree in Master of Laws in IP. In March 2012, the USC team filed for the first 2 patents on integrated mango products. In June of the same year, the GEMS executive team (Fr. Generoso “Jun” Rebayla and Dr. Taboada) found 3 groups of investors. Their personal networks came in handy in the process. The main driving force behind the selection of the investors was WIPO’s tenet that “patent should benefit humankind. The business venture is just a vehicle”.

*How was the technology developed?* The technology was developed and the prototype was created in the USC laboratory. As part of the agreement with the investors, a demonstration facility was built. This facility was housed in a leased warehouse in Mandaue. It was in June 2012 that the facility was built and made operational. The purpose of the demonstration facility was to show that the technology works as well as to show off to groups of investors the viability of the venture for commercial scale operations.

In November 2012, the second batch of investments intended for a large scale facility came in. The 1st round of investments was for the seed fund. By February planning for a bigger facility (100-ton capacity) in Bangkal, Lapu-Lapu City proceeded in earnest. The construction of the building facility was started in May 2013, module by module. This approach to construction expedited the construction process. Due to the strong typhoon that hit the country in 2013, construction was delayed. Construction was finally completed in 2015.

The plant occupies initially a total area of 2,500 square meters. Expansion of the work area by another 2,500 square meters was necessary for the drying process. This expansion was not a

problem since the land in which the plant stands is 1 hectare. This land is owned by one of the partners. The partner's contribution to the partnership was limited to the building, equipment, and working capital. Aside from Taboada's new-found knowledge on intellectual property, her background (PhD in Bio-Chemical Engineering) in chemical engineering particularly in designing a plant was put to practice.

*What was the support contributed by USC and others?* The biggest support from USC came in the form of materials, equipment, and paid time off from teaching to do research (i.e., research deloading), and scholarship. There was heavy reliance on USC's support in the early phase of development of GEMS as there was no external funding then.

USC provided the materials and use of the laboratory to develop the products. This expanded laboratory was the result of the 8-year development project funded by the Dutch government beginning in 1996. This included the improvement of facilities and equipment, development of curriculum, and training of faculty among others. It was a complete, state of the art laboratory located at the Bunzel Building in USC Talamban Campus. The whole USC community benefited from it.

There was a deliberate effort on the part of the USC Team to seek funders who do not meddle with the project as long as the funds are used according to set guidelines of the funding agency. Taboada said, "this is part of our strategy and we had to be careful in seeking external grant". The affiliation with USC facilitated the availment of grants from funding institutions. The first funding opportunity came in 2013 when USC got a total research grant of P10 million from the Philippine Higher Education Research Network (PHERNet) under the Commission on Higher Education (CHED). Another opportunity came through the United States Agency for International Development (USAID) grant assistance for the development of special products and technology. The fund from various sources was used in the development of the product and plant prototypes which happened during the demonstration stage in the small warehouse in Mandaue City. Further works including the monitoring of environmental conditions in the solar drying facility were funded by the Newton fund of the British Council, USAID, and CHED's PHERNet.

USC's biggest contribution to the formation of GEMS was encouragement. In Taboada's words, the GEMS team received "200% support especially from the USC cabinet and the Board of Trustees (BOT)". Her supervisor in research, Dr. Largo, and Fr. President Miranda, her supervisor for special projects, as well as Fr. Salas for academics gave their unwavering support. According to Taboada, "there were birthing pains but only the bed of roses is seen now". Referring to her superior, Taboada said, "I don't feel like I am getting special treatment. They were very professional in our dealings".

*Startup Phase and Challenges* In June 2012, the partnership was formed. No machineries were developed yet before 2012. The concept of frugal innovation came into play as product and technology (i.e., process) development were developed at laboratory scale at the initial stage of the project. Products were new and scaling up happened in stages from the laboratory to bench to pilot then to commercial scale.

There were challenges in developing the technology. Taboada said, “ours is slow compared to other countries”. The acquisition of supplies, chemicals, and other materials was through USC’s procurement system which was quite slow in the earlier years (mid-2000). Now, it is faster. According to Taboada, although USC has a state of the art facility, there are limitations. The need for the use of “high tech” and powerful equipment as well as the conduct of some chemical analyses had to be done in Singapore and/or in the US.

Because of government bureaucracy, there were delays in securing building and occupancy permits. The building permit alone requires 20 signatures. The occupancy permit was finally granted in May 2016, one year after the plant was built. The processing of permits from the Food and Drug Administration (FDA) was still ongoing at the time of the interview in the middle of 2016. The company is exempted from getting the environmental compliance certificate (ECC) but had to file anyway for formality to comply with regulations on sanitation. The export and import permits are being processed because these are needed for importing equipment and exporting products. Prior importations were done through USC. The imported equipment took some time to arrive because of the existing control process put in place in the university.

*Ownership Structure and Challenges in the Formation of the Partnership* Taboada pitched the business proposal to several investors and in investment fora before finally settling to discuss with the first batch of investors. It took 2-3 meetings within a month to seal the deal with the first four partners. The fifth partner, who contributed the seed fund, was ushered in by the four. Before the commercialization stage, the first four partners left the company. Another partner came in and put up the remainder of the fund needed for commercial operations.

*Government incentives for pioneering projects.* GEMS filed with the Board of Investments (BOI) for income tax holiday (TH). This entitles the company deferment in the payment of income tax until the 8th year (6 + 2) from start of commercial operations. The commercial operations should have started in 2014 but there were events like typhoon which delayed construction. GEMS asked that the reckoning year be moved to 2015 which was granted by BOI.

### **Retroducing causal mechanisms which enabled the creation of GEMS**

Following Blundel (2007) and Sayer (2010), the narrative account of Taboada was analyzed to identify the components and causal mechanisms which potentially explain academic entrepreneurship in USC as manifested through the formation of GEMS (Figure 3). In the process of retroducing, Sayer (2010) advised that “we try to get beyond the recognition that something produces some change to an understanding of what it is about the object that enables it to do this” (p. 72)

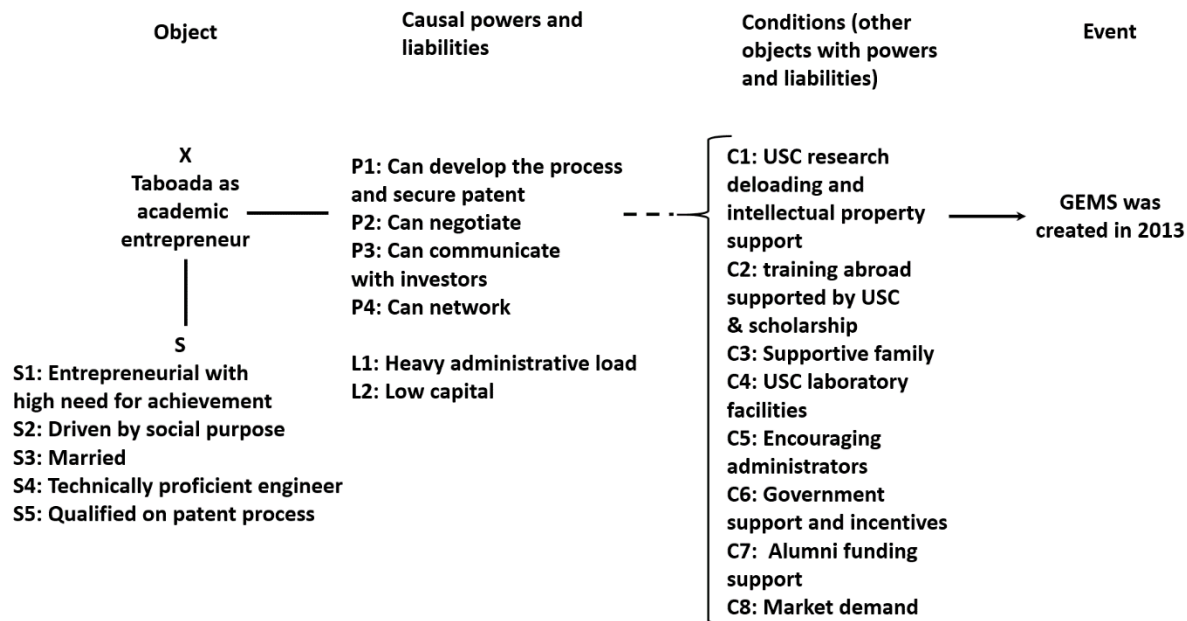


Figure 3. Retroduced explanatory model of academic entrepreneurship through GEMS

Based on retroduction, the main components of the emerging causal explanation for the formation of GEMS as an academic entrepreneurship event are Taboada as the academic entrepreneur, the structural and resource support capabilities of USC, the encouraging leadership of USC, government support and incentives, and family support for Taboada.

Following Pilegaard, Moroz, and Neergaard (2010), we looked at Taboada's enablements and limitations (powers and liabilities). The attributes of Taboada as a person, family woman, academic and IP advocate combined to build her nature as an academic entrepreneur with specific personality traits and skill sets. She is technically knowledgeable of both chemical engineering and patent processes. She is socially driven which spurred her to address the mango waste problem and the employment of youth from the dumpsites. She is entrepreneurial and willing to take the risk of investing her time on the venture. She also has spousal support.

These attributes enabled her to work on the needed process patent and seek the training and institutional support she needed from the university, despite her heavy administrative load and personal lack of capital.

Key conditions enabled Taboada's efforts to achieve fruition. The substantial support Taboada obtained from the university, including work load reduction for research (deloading), intellectual property training, actual patenting support, encouraging administrative supervision and adequate laboratory facilities were critical in supporting her efforts to commercialize. Outside of the university, family support, alumni funding and government incentives were likewise important supporting conditions which facilitated the creating of GEMS as a joint venture and made the commercialization of her process invention an actuality. The market demand for mango-derived

products enabled the venture to achieve sales (Ramoglou & Tsang, 2016) although the venture has yet to become profitable.

## Conclusions and future research

The paper contributes to the literature by proposing a new mechanisms-based theory of academic entrepreneurship and enterprise formation underpinned by critical realist philosophy of science. The actualization of the GEMS joint-venture spinoff can be explained through the interaction of a number of causal mechanisms involving the nature of Taboada as an academic-inventor-entrepreneur-family person supported by university arrangements, government policies and market conditions.

Following a CR perspective, the study reveals transfactual causal dynamics and conditions which can account for an actualized university spinoff. The findings suggest that if universities have faculty with the qualities of Taboada, then a system of university and funding support and favorable market and government conditions may enable the creation of intellectual property which can be spun off into a commercial venture.

Future research can look deeper at the particular conditions identified in the study in order to assess their relative contributions to the actualization of joint ventures. The importance of social purpose in spinoff creation can also be further investigated since this was only minimally touched in the current study. Finally, the causal mechanisms that affect the sustainability of an enterprise such as GEMS beyond the formation stage need to be investigated.

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# Crowdfunding and the venture creation process

**Raymond Allan G. Vergara**

*De La Salle University*

raymond.vergara@dlsu.edu.ph

## Abstract

This inquiry explores how crowdfunding affects the venture creation process specifically in the Philippine setting. Using a qualitative, intensive, multi-case based approach, the study traces the progress of four Philippine-based entrepreneurial ventures that began as crowdfunding projects. The progression is then compared to the entrepreneurial venture creation process model developed by Bhawe [*Journal of Business Venturing*, 9(3), 223-242 (1994)]. The study finds that crowdfunding modifies the venture creation process in every stage specified in the model.

**Key Words:** crowdfunding, venture creation process, Philippines, entrepreneurship

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## Introduction

Bhave's (1994) process model of entrepreneurial venture creation is one of the most cited paradigms that discusses and explains how a business venture is organized and develop. The venture creation process described is "iterative, nonlinear, feedback-driven, conceptual, and physical." The process involves 7 different elements or conceptual categories: opportunity recognition, commitment to physical creation, set up of production technology, organization creation, product creation, linking with markets, and customer feedback. While the entire process is nonlinear, Bhave explains each element as it forms part of three general stages in the process: opportunity stage, technology set-up and organization-creation stage, and exchange stage. The "end" of opportunity recognition is the business or product concept, while product and feedback, aside from payment, are traded in the culminating exchange stage.

Bhave further identifies important transitions points in the venture creation process. To transition from the opportunity stage to the technology set-up and organization-creation stage, entrepreneurs must make the commitment to the physical creation of the venture. While funding was not widely discussed in the Bhave (1994) study, it acknowledges that funding is an essential element in the production technology set-up and organization-creation stage. The first sale, on the other hand, is "the last step in the physical creation of a venture" and "bridges the boundary between the supply side and the demand side." Furthermore, the first sale establishes the exchange relationship between the venture and the customer, and also the point where the customer provides feedback for the first time. Figure 1 provides a simplified illustration of Bhave's venture creation process.



*Figure 1. Simplified Bhavé Model of Venture Creation*

### **Crowdfunding and the Evolving Role of the Consumer**

The Bhavé process model of venture creation clearly delineates the supply and demand side of any business transaction, and considers the customer, or the consumer, as an actor that resides only in the demand side. However, a growing body of literature acknowledges the expanding role of the consumer, and contends that consumer interests and activities extend beyond demand.

Von Hippel, Ogawa, and De Jong (2011), for example, contend that consumers are “major sources of product innovation” and take significant roles in the product development process. Beyond merely providing feedback during the exchange stage in the Bhavé model, consumers are taking proactive roles in modifying existing products or even innovating new products to suit their own needs. Von Hippel et al (2011) cite that the phenomenon of consumer innovation is brought about by developments in technology, such as 3D printing and outsourcing, which makes it easy for consumers to design and fabricate products for themselves.

Crowdfunding, a novel phenomenon and alternative fundraising scheme that allows consumers, or the “crowd,” to pool small amounts of money to fund a project, has also contributed to the expanding role of consumers. Crowdfunding essentially operates as pre-selling—when a campaign backer pledges support, it is essentially providing the funding for the manufacture of the product. Ordanini, Miceli, Pizzetti, and Parasuraman (2011) contend that by pledging support to or funding a project, the consumer also takes on the role of an investor, a similar assertion made by Belleflamme, Lambert, and Schwienbacher (2014). This essentially extends the consumer purview from the demand side into the supply side.

While the Bhavé model acknowledges the important role of consumer feedback in the venture creation process, it maintains that consumer feedback is only given during the exchange stage, which commences when the entrepreneur makes the first sale. Crowdfunding, however, changes the timing of consumer feedback. Essentially, in crowdfunding, the entrepreneur receives product feedback before the production process even begins. Many studies contend that it is this informational advantage that motivates entrepreneurs to participate in crowdfunding (Agrawal, Catalini, & Goldfarb, 2013; Belleflame et al, 2014; Lehner, Grabmann, Ennsgraber, 2015; Mollick & Kuppaswamy, 2014).

One particular advantage crowdfunding provides to entrepreneurs is a venue to test its product, offering a “unique way to validate original ideas in front of a specifically targeted audience” (Belleflame et al, 2014). What this means for the entrepreneur is that it allows their target market to try and evaluate the product. This provides crucial feedback to help the entrepreneur to decide whether the business concept is feasible and profitable.

## **Philippine Crowdfunding and the Bhave Model**

Extant literature on the expanding role of consumers suggest that the Bhave process model of venture creation is inadequate in explaining nascent phenomena, particularly with ventures that spring out of crowdfunding. Crowdfunding is essentially a pre-selling scheme (Belleflame et al, 2014), where campaign backers pledge support to a project of their choosing. Essentially, the campaign backers are funding the production of the products, and wait for the products to be manufactured and delivered to them. Crowdfunding campaigns usually run between 4 and 8 weeks. During the campaign, project owners promote their projects and engage campaign backers through feedback solicitation.

In the Philippines, crowdfunding platforms like The Spark Project follow a keep-what-you-raise model. Unlike the Kickstarter or all-or-nothing model, it allows project owners to collect and keep all of the pledges that they raise, which allows project owners to proceed with the project with or without complete funding. Most project owners receive the full funding only after the campaign ends. In The Spark Project, however, project owners are given the leeway to accept the pledge payments at any point during or after the campaign.

Many projects that began as crowdfunding campaigns on The Spark Project have since become thriving businesses. However, many of these ventures cannot be accurately traced using the Bhave process model of venture creation, particularly in how Bhave's conceptual categories related to the three stages of the process. The experience of these Philippine ventures raises the question, which is the subject of this inquiry: how does crowdfunding affect the venture creation process?

### **Framework and Method**

To understand the effects of crowdfunding in the venture creation process, the study traced the progress of entrepreneurial ventures that began as crowdfunding campaign projects in the Philippines. To provide focus, the study paid particular attention to three concepts in the Bhave process model of entrepreneurial venture creation in which crowdfunding may affect: (i.) business or product concept development, as identified during opportunity recognition, (ii.) commitment to physical creation, a necessary juncture that transitions the process from the opportunity stage to the technology and organization creation stage, and (iii.) linking to market, which conceptually resides in the exchange stage.

Figure 2 shows where these critical concepts reside in the Bhave venture creation model. Table 1, on the other hand, explains how these critical concepts are identified in the research.

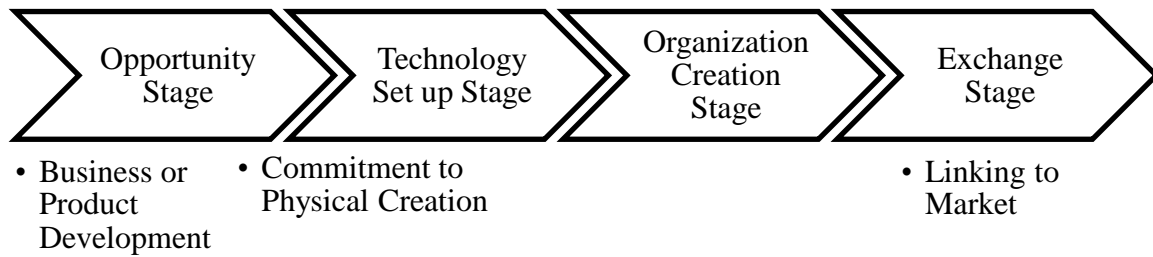


Figure 2. Critical Concepts in the Bhavé Venture Creation Model

Table 1  
*Operalization of the Critical Concepts*

Bhavé Critical Concept	Focus of research
Business or product development	When was the concept for the business or product developed?
Commitment to physical creation	When did the project owner commit to the physical creation of the venture?
Linking to market	When did the project owner make the first sale?

This study used a qualitative, intensive multiple case-based approach to trace the progress of four Philippine-based entrepreneurial ventures that were initially launched as crowdfunding projects. The study employs a purposive sampling method using the following case selection criteria: (1) ventures launched through The Spark Project, a Philippine-based crowdfunding platform that focuses on creative entrepreneurship projects, (2) ventures that launched their crowdfunding campaign prior to January 2016 and have been in operation for more than one year, and (3) ventures that continue to operate as of this writing. The author performed four in-depth interviews with the founders of these ventures as guided by a detailed semi-structured interview guide. To ensure the trustworthiness of this research, the study combined Guba and Lincoln's (1994) quality framework with Yin's (2014) quality design tests.

## Findings

### Venture: Camera Bag Venture

This camera bag venture began in 2013, with the co-founder's need for a replacement camera bag that fit his profession and lifestyle, which was found lacking in the local Philippine market. Instead of ordering one abroad, the co-founders decided to design one themselves upon seeing the opportunity in one of the co-founder's industrial design training and their proximity to an area renowned for bag manufacturing.

After a meeting with The Spark Project, the co-founders decided to launch a crowdfunding campaign to finance the production of their line of camera bags. Their primary motivation was to see if there was a market of consumers who will buy their unique camera bags and to test whether their project would become a viable business venture. Prior to launching their crowdfunding campaign, both co-founders looked for possible bag manufacturers to produce 30 to 60 bags. They

also conducted an informal market research survey, reaching out to photographers in their close personal and professional networks to elicit feedback and insight. They also launched a Facebook Page, which they intended to use as to promote both the crowdfunding campaign and their bags.

The crowdfunding campaign exceeded their funding target. The co-founder attests that participating in crowdfunding provided them with market insight and feedback that they continue to use in their venture. The success of the campaign convinced the co-founders to establish their venture, and soon after obtained a bank loan to expand their operations.

The venture creation process for this business began when the co-founders recognized that there was an opportunity in making camera bags, which supports the Bhavé model. Unlike the Bhavé model, however, the commitment to physical venture creation, did not proceed immediately after opportunity recognition. It only became apparent closer to the end of the crowdfunding campaign when the co-founders were more confident about the market's reception of their camera bag concept. In fact, the linking to market, signalled by the first sale, occurred prior to the commitment to the physical venture creation.

Furthermore, crowdfunding changes the chronology of market exchange. In the Bhavé model, it is implied that the sale makes the exchange between product, payment, and feedback simultaneous. In crowdfunding, project owners receive pledges and feedback first before any campaign backer receives any product. The linking to market, in this case, happens even before the co-founders made the commitment to create the physical venture.

Table 2  
*Venture Creation Process for Camera Bag Venture*

Bhavé Critical Concept	Focus of research
Business or product development	Co-founders conceptualized the camera bag during the opportunity stage
Commitment to physical creation	Supports the Bhavé Model Co-founders committed to the physical creation of the venture after making the first sale, closer to the end of the crowdfunding campaign.
Linking to market	Diverges from the Bhavé Model Co-founders made the first sale prior to the creation of the actual product.  Diverges from the Bhavé Model

### **Venture: Designer Wallet Venture**

This designer wallet venture began because one of three co-founders, a serial entrepreneur, wanted to establish a product-based business, which he intended to launch through a crowdfunding

campaign. The opportunity came when he met the venture's other co-founder who had the know-how to produce leather goods.

The crowdfunding campaign was launched in August 2015. The co-founders took six months to design the product, find suppliers, and plan for the campaign. Like the co-founders of the camera bag venture, the co-founders of the designer wallet venture intended to use the crowdfunding campaign as a market test for their product—they wanted to see if the venture will be a feasible and profitable one. The co-founders were also motivated by funding.

Prior to the launch of the crowdfunding campaign, the co-founders organized a pre-campaign launch and invited members of their close personal and professional network to participate in a private backing event. This event aimed to showcase the wallet designs that they will be crowdfunding and encouraged invited guests to pledge even before the official campaign began.

The campaign itself raised over three times their funding target. The campaign provided the co-founders with market feedback, particularly with regard to design preferences. It also encouraged the co-founders to commit to creating the physical venture. Like the camera bag venture, the designer wallet venture followed this pattern: (1) product concept, (2) linking to market, and (3) commitment to venture.

Table 3  
*Venture Creation Process for Designer Wallet Venture*

Bhave Critical Concept	Focus of research
Business or product development	Co-founders conceptualized the wallet during the opportunity stage
Commitment to physical creation	Supports the Bhave Model Co-founders committed to the physical creation of the venture after making the first sale, closer to the end of the crowdfunding campaign.
Linking to market	Diverges from the Bhave Model Co-founders made the first sale prior to the creation of the actual product.  Diverges from the Bhave Model

### **Venture: Entrepreneurial Board Game Venture**

The founder of the board game venture, a serial entrepreneur, initially intended his board game concept for personal use. However, after playing the board game with his professional partners, recognized that there was a market for his product. It took him more than a year of continual product testing and development before he decided to launch the board game through a

crowdfunding campaign. At this point, the founder already made the commitment to create a venture out of this game and considered crowdfunding as a fitting venue to launch the product.

Crowdfunding campaign preparations included sourcing suppliers and organizing offline events that encouraged would-be campaign backers to play and interact with the board game prototype. In the process, game players supplied feedback and insight, which the founder used to further develop the game. The crowdfunding campaign was launched in August 2015, and raised a little over its funding target. At the close of the campaign and once all backer rewards were fulfilled, the founder began preparations for the product's international launch through Kickstarter.

On the outset, it would seem that this venture follows Bhavé's venture creation process model: founder recognized an opportunity when he developed a product concept, then made a commitment to a venture, and finally, made the first sale through crowdfunding. However, it is important to note that the product concept itself evolved from its original conception throughout the entire crowdfunding campaign. The founder received the game's first feedback even before it made the commitment to establish a venture, and continued to receive feedback throughout the campaign. The founder admits that the final board game is very different from his original concept, and credits the community that played the game for the final product. The community of backers played an important role in the development of the product. The chronology of these events and the timing of feedback is different from the Bhavé model.

Table 4  
*Venture Creation Process for Board Game Venture*

Bhavé Critical Concept	Focus of research
Business or product development	Founder conceptualized the board game prior to the crowdfunding campaign (during the opportunity stage); however, the product concept itself evolved during the campaign once the founder received feedback from those who played the boardgame during the offline events.
Commitment to physical creation	Diverges from the Bhavé Model Founders committed to the physical creation of the venture before making the first sale.
Linking to market	Supports the Bhavé Model Co-founders made the first sale prior to the creation of the actual product.
	Diverges from the Bhavé Model

### **Venture: River Cleaning Venture**

Unlike the first three stages, the river cleaning venture was already an established business prior to launching its crowdfunding campaign. The founder, however, acknowledges that prior to the campaign, venture did not have a profitable revenue model that could sustain the business in the long run. The founder's motivation to crowdfund was to raise funding to jumpstart the business and to raise market exposure. While the August 2015 campaign did not raise its target funding, the



venture was able to receive market insight and consumer feedback that allowed the venture to develop a feasible revenue model.

The venture followed the Bhave model of venture creation. Prior to crowdfunding, the founder saw an opportunity to use microbial technology to clean rivers and committed to creating a physical venture. However, the venture lacked a profitable revenue model concept, which compelled the founder to crowdfund a project to revitalize the business. In the process, campaign backer feedback and experiences during the project provided crucial information that allowed the founder to develop a feasible and sustainable revenue model.

Table 5  
*Venture Creation Process for River Cleaning Venture*

Bhave Critical Concept	Focus of research
Business or product development	Founder conceptualized the practical use for microbial technology during the opportunity stage; however, after receiving crucial information during crowdfunding campaign, the founder reassessed the business model based on backer feedback.
Commitment to physical creation	Diverges from the Bhave Model Founder committed to the physical creation of the venture prior to the crowdfunding campaign.
Linking to market	Supports the Bhave Model Co-founders made the first sale prior to the creation of the actual product.
	Diverges from the Bhave Model

## Discussion

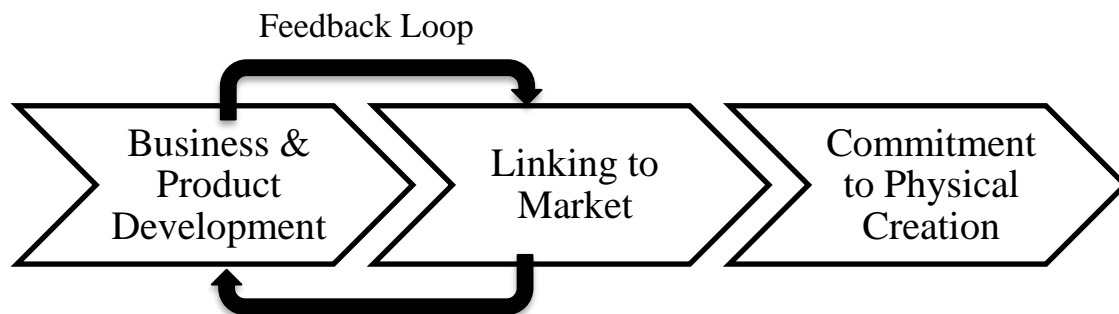
In all of the four cases discussed above, crowdfunding affects the chronology of stages in the venture creation process. In the Bhave model, the commitment to physical venture creation is considered as the transition point from opportunity stage into the technological set-up and organization creation stage. However, in the first two cases, founders committed to the physical venture creation closer to the end of the crowdfunding campaign, when the co-founders were confident that there is a market that will buy their products. The two cases, in particular, regarded their respective crowdfunding campaigns as live market tests, which allow them to get product feedback and ascertain whether their project could be developed into a profitable venture.

Prior to committing, the project is treated as a one-time production of a small batch of goods, which minimizes the risk associated with establishing a business. Founders also need not invest a large amount of money to run the project, since campaign backer pledges finance the production of goods. Further minimizing the risk of associated to venture creation are business

trends that allow ventures to manufacture products without investing heavily in technological set-up or organization creation in order to produce their product. In particular, outsourcing made it possible for venture founders to subcontract production to third parties that have the technological know-how and equipment to manufacture their product according to their specifications. Crowdfunding and current business trends, then, allow founders to conduct low-risk market experiments and delay committing to a business venture.

Crowdfunding also changes the process of product development. In the Bhave model, product development and creation is solely associated with the producer and resides only in the supply side. However, as the last two cases have shown, campaign backers, or consumers, are heavily involved in the product development particularly in as far as feedback becomes an important ingredient in the process.

Crowdfunding also advances the linking to market, which, in the Bhave model, only occurs when the venture makes its first sale. Furthermore, the exchange goes beyond product and payment. In crowdfunding, product feedback is also exchanged, particularly during the campaign, which makes the campaign backer or consumer part of the business and product development process. Crowdfunding has shown that the demand and supply link can be advanced even during product and business conceptualization, while the expanding role of consumers has been blurring the boundary that separates supply and demand.



*Figure 3. Simplified Venture Creation Process for Crowdfunding*

## Conclusion

Crowdfunding has changed the way demand and supply actors interact, thereby modifying the venture creation process in every stage. The crucial factor is feedback exchange, which, through crowdfunding, may be given by consumers even as far back as the product and business conceptualization stage. It also alters product development, which allows venture founders to create a product that consumers want. Combined with current business trends, such as outsourcing, crowdfunding allows potential entrepreneurs to conduct live market tests and delay committing to the physical creation of venture. Crowdfunding blurs the boundary that separates the demand and supply sides by expanding the role of the consumer—as a co-producer and as an investor.

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# The Philippine Taekwondo Association Experience: Developing a model of sport governance and sustainability for National Sports Associations

**Geraldine G. Bernardo**

*De La Salle University*

geraldine.bernardo@dlsu.edu.ph

## Abstract

Most developing countries rely on government funding to sustain their sports programs. Elite sports development in the country is dependent on the symbiotic coordination between the Philippine Sports Commission (PSC) and the Philippine Olympic Committee (POC); with the PSC serving as the funding agency of the government and the POC as the mother organization of the NSAs and having the sole authority to recommend athletes for competitions organized by the International Olympic Committee (IOC). Sports funding has remained virtually constant over the years despite the fact that the number of NSAs and athletes have tripled from 18 NSAs in the 1990's to the current 60. Typically, majority of the NSAs are unused to professional management and accountability and remain heavily reliant on the PSC for funding support. Korean national CEO Grandmaster Sung Chon Hong, who heads the PTA, has been instrumental in making taekwondo the number one martial arts in the country. With his strong emphasis on professional development, value co-creation and multi-sectoral governance, the PTA today boasts of more than 1 million registered practitioners nationwide, various revenue streams and consistent podium success. From the PTA experience, this study describes the themes and critical success factors in the evolution towards self-sufficiency of an NSA.

**Key Words:** sport governance, sustainability, autonomous, National Sports Association, taekwondo

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## Introduction

Most developing nations rely on government funding to sustain their sports program, the Philippines notwithstanding. Elite sport development in the country is dependent on the harmonious coordination between the Philippine Sports Commission (PSC) and the Philippine Olympic Committee (POC). The PSC was created through Republic Act No. 6847 to serve as the "sole policy-making and coordinating body of all amateur sports development programs and institutions in the Philippines." While the POC is a private, non-profit organization recognized by the International Olympic Committee (IOC) as having the sole authority for representation of the Philippines in the Olympic Games, Asian Games, Southeast Asian Games and other multi-event competitions.

The POC serves as the mother organization of the National Sports Associations (NSAs). Each NSA a.k.a. National Sports Federation (NSF) is subordinated by their respective International Federations, which in turn recognizes the NSA as the governing body of their sport in their own countries. NSAs are responsible for recruiting and selecting athletes, organizing clubs and competitions and providing technical assistance for recreational or grassroots sports (Dayrit, 2003).

In principle, the POC is financially independent and does not receive subsidies from the government. Though their members, the NSAs, receive financial assistance from the PSC in terms of athletes' and coaches' allowances, travel and training expenses. However, sport funding has remained virtually constant over the years despite the fact that the number of athletes and at least tripled – from 200 athletes from approximately 18 sports to upwards of 800 athletes in 60 NSAs.

Unused to professional management and accountability, majority of the Philippine NSA's remain totally reliant and constrained by the amount of support it receives. Their situation is made worse by the highly politicized nature of Philippine sports and the bias of corporate sponsors towards the more "popular" sports such as basketball, boxing and of late, volleyball.

## **Review of Literature**

Sport has proven to have vast applications in the promotion of health, education, nationalism and developmental goals. It was in 1966 when the first formal sport management program was created to address the increasing complexities of managing sport, recreation and athletic programs in various educational, public and commercial settings (Zeigler, 2007). Sport is also one of the fastest growing industries and impacts many aspects of the economy such as tourism, infrastructure and entertainment (Gillentine & Crow, 2005). As per the KPMG auditing firm, "the global sports market, comprising of infrastructure, events, training, manufacturing and retail of sporting goods is estimated at \$600 to 700 billion, accounting for approximately 1% of the Global GDP (KPMG, 2016)."

Though mainstream leadership and management theories have been applied (and researched) in the realm of sports organizations, there are still notable differences in managing the latter. For the most part, NSAs are non-profit organizations and primarily exist for the promotion of collective goals either for public benefit, or for mutual benefit to a particular group (Ferkins, et al., 2005). NSAs, as such, shall be autonomous and shall have exclusive technical control over the promotion and development of the particular sport for which they are organized, subject however to the supervisory and visitorial powers of the Commission (R.A. 6847, 1990)."

NSAs are further differentiated by the precepts of shared leadership and stewardship. Though many sports organizations have evolved in terms of ownership, organizational structure, and scope, their social obligation to manage sports responsibly remains the same: balancing the interests of various stakeholders within and outside the organization while contending with public scrutiny and commercial viability (Peachey et al., 2015).

The acknowledged value of sport is why businesses, government and communities provide much of the funding support to the sport governing bodies in the first place. However, like their

international counterparts, NSAs face clamors for improved governance in terms of accountability and transparency (Bowers & Dixon, 2015). In the controversial Crawford Report commissioned by the Australian government, the study cites the lack of efficiency in public spending given to sport governing bodies for the few medal gains; vis-à-vis rationalizing funds instead towards improving mass and school based participation that will eventually redound to increasing the next crop of elite sport competitors. Adding to the lack of confidence towards the sport governing bodies are allegations of corruption, doping and game fixing, as instigated by its own sport leaders; thus, underscoring the need for reform by way of defining policies and regulations that may be unique to the governance of sport (Burson-Marsteller / TSE Consulting, 2016). (Hums)

Whereas governance principles are similar across public and private organizations, in its broadest sense, sport governance is the “exercise of power and authority in sport organizations, including: (1) policy making to determine organizational mission, membership, eligibility; and, (2) regulatory power within the organization’s appropriate local, national and international scope (Hums and McClean, 2017). During the Seminar on Autonomy of Olympic and Sport Movement in 2008, the IOC introduced the “Basic Universal Principles of Good Governance of the Olympic and Sports Movement” and enjoined all its members to adopt the said guidelines as the minimum standard of governance. Items herein include considerations in creating the vision and mission statements, code of ethics, reporting responsibilities, appointment of positions and stakeholder management, among others. However, it remains unclear whether enforcement of such policies do take place and to whom the oversight function ultimately falls under.

Be that as it may, progressive sport organizations find it expedient and sustainable to behave more “business-like”, which includes professionalizing its ranks, seeking other revenue sources, while at the same time proving their relevance to their constituents and to the public.

## **Significance**

Therefore, given the social, economic and political significance of sports, the proponent seeks to contribute to the emerging theories in sport governance to address the challenges that sports governing bodies face. The study is an analytical research on the leadership and management practices of the Philippine Taekwondo Association (PTA), one of the most successful and productive NSAs in the country in terms of podium success, membership and revenue generation. This research looked into the policies, processes and systems of the PTA organization to arrive at a conceptual framework for the sustainability of NSAs.

Despite the abundance of research on leadership and management theories in sport-based settings, much of them are on-the-field rather than from the organizational standpoint; almost none in the Philippine context nor one that studies the evolution of a start-up NSA towards “self-sufficiency”. This study seeks to expand knowledge in applied sport governance and towards a more holistic approach to sustainability in sports; to include not only environmental impacts, but also financial viability and social capital.

## **Methodology**

Among the 60 NSA members of the POC, the proponent has selected the PTA for this research, given the length and breadth of its organization, existence of institutionalized sport development programs, overall podium success and relative financial self-sufficiency -- as exhibited by its numerous high-profile sponsorships and revenue generating sources. Furthermore, the PTA has not had any known power struggles, at least not outwardly, as is common in many NSAs where 2 or more groups would claim rightful leadership; thus rendering the PTA as a suitable model for this study due to its political stability and “good” governance vis-à-vis other NSA counterparts.

The data was collected through in-depth interviews with key members, current athletes and former members of the PTA, as well as information derived from online resources. Among those in the PTA who were interviewed were: Deputy Secretary General Stephen Fernandez, Training Director Igor Mella, International Referee Ricky Santiago, National Coach Rocky Samson, former member Gideon Diestro, and the taekwondo student-athletes Kristina Lopez, Kirk Barbosa, and MacAvyngyr Alob. Questions asked delved into institutional history, chronology of events, organizational structure, as well as PTA culture, policies and practices. Answers were corroborated across several interviewees. From the data, inductive reasoning was used to arrive at the critical success factors, almost evolutionary in nature, as manifested by the PTA. Thus leading to the construction of the 4 cornerstones of the conceptual framework of sustainable NSA's – to be elaborated under “Findings and Discussion”.

There is also discussion of influential literature on leadership, governance and management in various settings such as sports organizations, NGOs and business enterprises.

## **Findings and Discussion**

### **Start-Up Years of the Philippine Taekwondo Association (PTA)**

The Korean martial art of taekwondo was virtually unknown in the country compared to other martial art forms when in 1976, Grandmaster Sung Chon Hong (GM Hong) was assigned by the World Taekwondo Federation (WTF) to propagate the sport in the Philippines. GM Hong took over the helm from his predecessors Grandmasters Bok Man Kim and Young Man Park to establish the Philippine Taekwondo Association (PTA).

GM Hong was hands-on in organizing the first taekwondo clinics and gathered existing taekwondo enthusiasts to the fold of the PTA. As there were no other qualified instructors to teach taekwondo, he personally created the instructors' manuals that outlined the lessons and steps to promotion in belt ranking. The manuals also espoused the key tenets of taekwondo which are courtesy, integrity, perseverance, self-control and indomitable spirit. GM Hong invokes all his constituents to imbibe such tenets even in their day-to-day management practice.

GM Hong held the first National Taekwondo Championships in 1979 at the Rizal Memorial Stadium where 30 participants took part. At the very outset, GM Hong's indefatigable mission was to develop the most competitive contingent to represent the PTA. Vetting and honing his athletes

only at high caliber tournaments, the PTA has become one of the most productive NSAs in terms of generating medals and Olympic qualifiers since its inception. In 1992, Taekwondo was featured as a demonstration sport where the Philippine contingent comprised of Stephen Fernandez and Bea Lucero each won Bronze Medals.

### **Organization and League System**

From their central gym and headquarters at the PSC in Manila, PTA expanded its phalanx nationwide by creating 20 Regional Management Committees (RMCs) spanning Luzon, Visayas and Mindanao, and the autonomous regions. PTA has members from the Armed Forces of the Philippines (AFP), the Philippine National Police (PNP) and the Department of Education (DepEd). As a testament to their apolitical nature, PTA also has members from the rebel groups of the New People's Army (NPA) and the Abu Sayyaf.

The Taekwondo Black Brotherhood (TBB) and Sorority (TBS) was formed in 1980 representing the crème de la crème of the PTA athletes, as chosen by their seniors. Taekwondo is played in all the major and minor leagues in both the private and public schools, including the AFP-PNP Olympics, the DepEd-led Palarong Pambansa and the PSC-led Batang Pinoy and National Games.

In the 40 years of existence, GM Hong remains largely as the Chief Executive Officer. The President of the PTA is Robert Aventajado. Congressman Monsour del Rosario serves as the Secretary-General and Commissioner of the Philippine Taekwondo League. The organization includes departments such as the National Team for Kyorugi (full contact sparring) and Poomsae (forms) under Igor Mella, the Games Committee under Raul Samson, the Marketing Department under Jesus Morales III, the Regional Affairs Central Committee under Stephen Fernandez and the National Referee Council under Ricardo Santiago, Jr.

SMART Telecommunications and Milo of Nestlé Philippines have been the most long-standing sponsors of the PTA. For its 10th year program, PTA has partnered with SM Malls to showcase taekwondo action in 45 malls nationwide. PTA also carries the Peak and Kix Martial Arts Equipment that supplies the uniforms, shin guards, electronic gear and other competition paraphernalia. PTA also publishes a regular magazine for circulation and at one time produced a television show for taekwondo.

In 2010, GM Hong created a parallel organization, the Philippine Taekwondo Foundation (PTF) which functions to provide standardized education and certification of instructors, referees, examiners and competition managers. PTF is also in charge of the National Demonstration Team. Today, the PTA has 3,000 certified instructors and over a million registered practitioners all over the country. See Annex 1 for the PTA and PTF Organizations, the tournaments and course list.

### **Conceptual Framework for Sustainable NSAs**

Based on the experiences of the PTA, the researcher observed four general components that have contributed towards the success and sustainability of PTA today. This study purports that each component or cornerstone is integral and enhances the value of the other. See Figure 1.





*Figure 1. Conceptual Framework for Sustainable NSA*

**Institutionalized Athlete, Tournament and Professional Development.** Incumbent upon any NSA is to develop athletes and create tournaments for the propagation of their sport. Even as a struggling start-up, GM Hong imposed standardization and quality instruction for his instructors and coaches. He also understood that having a “winning team” is the most important validation of all his PTA programs. Hence, vetting the most competitive and qualified athletes is the overarching mindset, rather than fielding players who may have the “right” connections.

The Taekwondo Blackbelt Brotherhood (TBB) and Sorority (TBS) represent a clear career path for aspirational elite-hopefuls. With the respectable bronze finish during the 1992 Olympics in Barcelona, it became a challenge as to who will become the next medalist in the Olympics. Membership to the TBB and TBS brings much prestige during and beyond the athletes’ competitive career. They are among the consultative bodies of the PTA and a source for key positions in the organization.

Together with the 20 Regional Management Committees and Council Members, the PTA organizes periodic and scheduled tournaments, promotion tests and instructor development year round, averaging at least 150 events a year and more so with the addition of the SM Mall events.

**Resource Generation and Value Co-Creation.** Today, it is almost difficult to imagine that the PTA has had to market the taekwondo sport then as “Korean Karate”. As a start-up organization, GM Hong needed to secure, not only his own viability but that of the organization’s. The first sports clinics and instructor’s training were handled by GM Hong himself. From his initial retinue of disciples came his first resources for manpower, networks and counsel.

Even with the accorded financial and venue support from the PSC, PTA created other sources of revenue from sponsorships, merchandise and other earned income from its various events and certification tests. This allowed PTA more leeway to sustain the various grassroots activities such as providing free sports clinics and technical assistance to fledgling taekwondo clubs and institutions.

Each retired athlete or coach also has the opportunity to manage their own “franchises” of taekwondo gyms with the authority of GM Hong as well as the respective RMCs governing the area. Mandated minimums for standard fees or per diems ensured that instructors themselves will be financially viable.

Among the most invaluable resources of the PTA are found beyond its headquarters, notwithstanding the multitude of students and parents that comprise the active PTA community. From the taekwondo alumni, many can be found in highly influential positions of business, government, academe and the media. GM Hong is also an active member in the international federations of taekwondo and possesses considerable clout here and abroad.

A well-run sports organization is poised to offer several value propositions to its potential sponsors. In the case of PTA, these are its track record of winning athletes, the database of a million registered members and the 150 or so nationwide events that they hold every year. Instinctively, GM Hong understands the importance of value co-creation between sports and businesses. The psychic income that comes with successful podium performance redounds to benefits for both the sports organization and its external partners.

**Multi-Sectoral Sport Governance.** The PTA is set up as a matrix organization where the functional committees govern across the geographic-based RMCs. Having such an organization allows for homogenous governance across the archipelagic Philippines. GM Hong himself conducts that periodic general assemblies and “alignment” meetings for purposes of information dissemination updating of taekwondo instruction. In so doing, RMCs must echo the directives of the mother organization and emulate not only the values of the leader but also carry out the structured programs, tests and tournaments in fulfillment of the PTA missions.

GM Hong’s policy of “hiring from within” for key personnel and coaches decidedly shortens the learning curve and assures compatibility with the values and management culture of the PTA. The key leaders also assist in deciding the composition of the national taekwondo team.

Among the consultative bodies of the PTA assisting GM Hong are the board members, RMC leaders and the TBB/TBS. Ultimately, the involvement, expertise and experience of these key personnel will play a critical role in developing the strategic capability for a seamless succession in the PTA leadership. Ferkins and Shilbury (2015) establishes these six critical factors as: “will and skill” of the board, operational knowledge, integration of regional entities into the governing role, monitoring and control function, co-leading strategy development and co-leading of strategy into board processes.

**Leadership and Management by Sport Values.** Perhaps the most complicated component of the framework is to capture leadership and management, as exemplified by GM Hong. To a large extent, leaders are perceived as causal agents that will lead to the success or failure of an organization (Soucie, 1994). Interestingly, GM Hong is an engineer by education, which may explain the efficient and systematic manner in which he organized the PTA from the ground up, bereft of any prior formal guidance. Still, he needed the requisites of the proper mandate, as well as the necessary interpersonal, conceptual and technical skills to lead the PTA.

In the dispense of his duties, it may even have worked to GM Hong's advantage to exploit the tenets of taekwondo (courtesy, integrity, self-control etc.) to exact his power and influence, combined with the paternalistic leadership style prevalent among non-Western organizations (Lu & Hsu, 2015). GM Hong practices inclusivity, gratefulness (similar to Filipino "utang na loob") and relationship building in all his associations, even to erring or aberrant members.

Soucie's (1994) prescriptions for effective managerial leadership in sports organizations, though not far different from other non-sport enterprises, approximates what GM Hong has been practicing thus far. To cite a few:

- Cultivate large network of contacts. Develop and nurture favorable interpersonal relationships with subordinates, peers, superiors and outsiders and be connected to the world around you.
- Develop a variety of internal and external, formal and informal power bases. Secure a minimum amount of hierarchical position power.
- Clarify role demands and expectations, and clearly establish responsibilities and limits of all organizational members. Maintain a balanced concern for the needs of the organization and those of people within the organization.

Regardless of sport, Management by Values (MBV) was perceived as important and useful in enhancing organizational performance; whereby sports organization members are engaged to develop or practice core values and to adapt them into management practice and strategy implementation (Laroche et al., 2014).

## **Conclusion and Implications For Future Research**

There have been several factors that contributed to the trajectory of PTA's growth which included a combination of traditional management know-how, business acumen and values-based leadership. GM Hong is clearly causal factor here. Adapting his management of PTA as the organization grew in scope and complexity. Consequently, PTA has been developing its organizational capability to pave the way for a seamless succession of leadership later on.

The conceptual framework for sustainable NSAs was created upon the themes gleaned by the researcher and aims to contribute to emerging theories in sport governance, self-sufficiency and start-up sport organizations. It posits that the four components indicated are integral "cornerstones" and must be present in support of each other. To wit, in almost evolutionary fashion: Institutionalized Athlete, Tournament and Professional Development; Resource Generation and Value Co-Creation; Multi-Sectoral Sport Governance; and Leadership and Management by Sport Values. Though the framework is a simplistic rendition, it does not take away the importance of developing the necessary competencies, wherewithal and leadership aplomb, as discussed, to execute each cornerstone successfully and harmoniously.

There is a need for longitudinal research, comparative studies and action research to test the concept to either start-up or mature NSAs; and, if the framework can be used in other sports organizations under various settings and ownership structures whether locally and internationally. There are also opportunities to expand research into evaluating or assessing NSA board member

competencies, sources of public and private funding, and adherence to IOC governance parameters by the NSAs being funded by the Philippine government.

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# Psychographic segmentation and profiling of millennials in Davao City

**Rodilina B. Marte and Danilo M. Te**

*Ateneo de Davao University*

rbmarte@addu.edu.ph

## Abstract

As there were no millennial psychographic segmentation studies done in Davao City, the researchers embarked on this particular study and focused on the values and purchasing behavior (lifestyle and attitude) of the millennials. The researchers localized the psychographic segmentation study as the culture in Davao City based on values may be different from other cities of the country. The study was based on the List of Values (LOV) theory by Kahle (Kahle, Beatty, & Homer, 1986). The variables used in the conceptual framework were anchored on Kahle's variables: self-respect, security, warm relationships with others, self-fulfillment, sense of accomplishment, being respected, sense of belonging, fun and enjoyment, and excitement.

The study was descriptive, exploratory, and correlational in design. It measured the variables using the following multivariate techniques: Factor Analysis and Cluster Analysis. The 280 millennial respondents were randomly selected at the 5 major malls in Davao City, and survey questionnaire was used in collecting the data.

The study manifested major segments of millennials that can be targeted by the marketers. Psychographic segmentation conducted resulted to four (4) segments identified namely: the Contented Millennials who are described as impulsive and spontaneous shoppers, the Utilitarian Millennials who are the rational shoppers, the Humble Millennials who are hedonic shoppers, and the Proud Millennials who are smart and practical shoppers. The researchers offered recommendations for each segment that the mall marketers, retailers and future investors can pursue or consider for their decision making. Moreover, the findings may be used by the academe to discuss and describe the psychographics of the millennials. Future researchers may also use the findings to develop and deepen any related studies.

**Key Words:** Psychographic Segmentation, Millennials, Values and Attitudes, Buying Preferences, Purchase behavior

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## Introduction

Marketers segment the whole market and identify which to target and serve (Tynan & Drayton, 1987), since taking the whole market is too big and maybe very difficult and challenging. Segmentation becomes necessary to define the market segment to serve and meet their varied needs. However, as most marketers rely on a priori segmentation, also referred to as commonsense segmentation (Dolnicar, 2004), it is done without the benefit of research. And usually, they treat

customers based on demographic group membership only (Rotfeld, 2007). Therefore, they would miss out on the influences on consumers' buying behavior, which include but not limited to values, attitude, and lifestyle (Pride & Ferrell, 2011).

In Davao City, while it is a big geographic market for consumer goods, segmentation studies done were mostly about buying preferences of various market segments, profiled through their demographic and geographic data. And as a market, the Millennials, or Generation Y, with their growing influence on evolving trends across all industries (KMC Savills, 2016), is also the most prominent to target among the various generation cohorts.

In Davao City, the millennials comprised 35% of the population in 2017 (source: <http://www.davaocity.gov.ph/davao/demography.aspx>). Indeed, there is significant value on focusing on this particular generation to understand their psychographics, as they are bigger in proportion compared to the older generation, Gen X and Baby Boomers, which accounted for 17% and 10% respectively.

Thus, this study was localized on the psychographic segmentation of Davao City millennials based on values linked to their attitude and lifestyle, to gain insights on how they are as shoppers.

## **Psychographic Segmentation**

Pride (2011) discussed psychographic segmentation as dividing a market in a terms of personality characteristics, motives and lifestyle. For motives segmentation, a market is divided according to consumers' reasons for making a purchase; for lifestyle segmentation, it is divided according to how they spend their time, importance of things in their surroundings, beliefs about themselves and broader issues, and some demographic characteristics (Vyncke, 2002).

Several studies have established the value of psychographic segmentation over demographic segmentation. Boote (1981) reported that in a study with 450 restaurant diners, brand preference is not differentiated with respect to demographic characteristics of consumers whereas, it revealed differences in brand preference when based on value orientations.

## **Personal Values**

The List of Values (LOV) theory by Kahle (Kahle, Beatty, & Homer, 1986) formed the basis of the variables used in this study namely, self-respect, security, warm relationships with others, self-fulfillment, sense of accomplishment, being respected, sense of belonging, fun and enjoyment, and excitement.

In a study done by Thompson (2009) entitled *Interpreting Kahle's List of Values: Being Respected, Security, and Self-Fulfillment in Context*, he applied the LOV model using qualitative method. The results showed significant variance between respondent portrayals of each value. In their descriptions, each student drew upon distinct and varying themes in unique approaches to each concept. However, no single inclusive definition could be derived for security, and self-fulfillment. Thompson recommended that further research on the validity of Kahle's List of Values



should focus on acquiring larger, representative sample from which generalizable data can be obtained, and hence a more appropriate quantitative tool.

People often purchase products for the benefit of value fulfillment (Khale et al., 1998). Values provide clues about how a society operates because values are also central to society. Some scholars view values as the individual's representation of a society's goals.

Further, as 'the function of marketing is to help consumers fulfill their values' (Khale & Kennedy, 1998), there is a need to do psychographic segmentation to understand what customers value and how these can be fulfilled by marketers.

### **Millennials Segmentation**

According to a study by Rebecca Lau (2015), about the new perspective of Millennials, there are five distinct segments that emerged from the research and analysis of this study: 1.) the Up & Comers, a diverse group of males that tend to be the life of the party; with a high income and elevated education levels, this group has money to spend, but low awareness of even the most common brands; 2.) the Mavens are the Millennial mom segment which tend to be high income earners with a baby in tow; 3.) the Eclectics, primarily comprised of female free spirits looking for the perfect deal, had a 100% awareness rate of Amazon; 4.) the Skeptics, seemed to be the quintessential video, gamers showed their priorities focused on social media, sci-fi films and fast food; and 5.) the Trendsetters are the most likely to start or try a new trend and keep up with the latest entertainment gossip and have large social networks to stay connected; trendsetters also seem to purchase across the widest variety of brands the most often

Looking at the generation, as a whole, the study showed three top drivers as the most important when choosing a brand or retailer: 1.) being trustworthy, 2.) high quality, and 3.) low price. However, within each segment the top drivers did vary. The Mavens, for example, demand easy access to information as one of their top three drivers. Meanwhile, the Up & Comers and Trendsetters prefer a no-hassle return policy.

The majority of Millennials tend to prefer using cash or a debit cards when making a purchase.

In order to target these segments correctly and effectively, Lau identified five themes that are important to consider. To win with Millennials, brands must strive to create an experience, make it frictionless, offer customization, build loyalty and demonstrate value.

### **Methods and Data Measurement**

The study was conducted in the five major malls in Davao City, namely: Abreeza Mall, Gaisano Mall of Davao, NCCC Mall of Davao, SM Mall- Ecoland, and SM-Mall Lanang. The Millennials shoppers aged 18-34 were purposively and randomly selected. About 56 millennial respondents per mall (or a total of 280 for the 5 malls) were intercepted by the interviewers who were positioned at the mall entrance during late afternoon of Friday, Saturday, and Sunday. This was based on the mall study of Te (2007) where the shoppers' traffic is observed during late



afternoon of Fridays, Saturdays and Sundays. Roughly every third incoming millennial shopper queuing at the mall entrance at the specified time was randomly selected.

The survey questionnaire is composed of 3 parts. Part 1 is about values; Part 2 is about buying preferences; and Part 3 is about their demographic data. The survey questionnaire was validated by three (3) sociology and psychology experts to minimize the ambiguity of questions used.

## **Data Analysis & Findings**

### **Cluster Analysis**

The main multivariate technique used in the study was hierarchical cluster analysis. The study came up with four major clusters. The clusters formed were cross tabulated with the millennials' buying preferences and demographic data as basis for profiling them as follows.

**The Contented Millennials.** They value warm relationship with others, sense of accomplishment, self-respect, self-fulfillment, fun and enjoyment in life, sense of belonging, and being respected. Generally, they share the same buying behavior with the other millennials except that compared to other segments, they are least attracted to discounted items, least mindful of good customer service, least particular about other customers' behavior, least value sharing of friends' best value shopping experience or checking out online friends for latest shopping information and hanging out activities. They do not plan their day and time of shopping and don't think twice about the price when they really like a product. They are best described as impulsive and spontaneous buyers. The majority of millennials in this segment are female (58%), belonged to the 18-21 years of age bracket (67%), single (94%), college students (64%), and have no income but allowance only (58%). The other millennials in this segment, are in the 22-25 (18%) and 26-30 (16%) age bracket, college graduate (18%), employed by private companies (18%), and earning Php8,00-15,000 (15%) and Php15,001-30,000 (12%) monthly.

**The Utilitarian Millennials.** They value security and recognition, warm relationships with others, sense of belonging, security, being respected, excitement, self-fulfillment, and self-respect. They exhibit the typical behavior of the millennials in Davao City. However, they are the least demanding among the four (4) segments in terms of buying brand new products and branded products. They plan their day and time of shopping. They respond to store sales promotion and enjoy shopping alone. They are the rational and value shoppers. The majority of millennials in this segment are female (60%), belonged to the 18-21 years age bracket (51%), single (92%), most of them are college students (50%), and have no income but allowance only (45%). The other millennials in this segment, are in the 22-25 (29%) and 26-30 (14%) age bracket, college graduate (31%), employed by private companies (23%), and earning Php8,001-15,000 (26%) and Php15,001-30,000 (13%) monthly.

**The Humble Millennials.** They value self-respect, however, they feel they do not have much to be proud of yet. This could mean that they need to work on things that they can be proud of to reach that level of healthy self-respect. In contrast to the other segments, they have the least number to prefer cash payment, to shop for best price, to avail of store sales promotion and to shop alone. Half of this segment prefer a small specialty store while the other half prefer the department

store. They are not price-conscious. Shopping is a source image-building for them to boost confidence and self-esteem. They can best be described as hedonic shoppers. The majority of millennials in this segment are female (54%), belonged to the 18-21 years of age bracket (64%), single (98%), college students (56%), and have no income but allowance only (59%). The other millennials in this segment, are in the 22-25 (24%) and 26-30 (10%) age bracket, college graduate (28%), employed by private companies (14%), and earning Php8,001-15,000 (15%), Php15,001-30,000 (11%), Php8,000 and below (10%) monthly, respectively.

**The Proud Millennials.** They value and enjoy being respected as they do not fear being misunderstood and have not yet experienced being hurt. Among the general buying behavior of the Davao City millennials, they have the most number who prefer convenient location for shopping, consider the overall store concept as very important, and prefer good customer service where personnel regard customers highly. They do not like crowded or busy shops. They are the most demanding customers of a shopping mall or store. They prefer buying branded products, and are most interested with brand new products with variety of choices. They know what they want – quality products. They check out online friends for shopping tips and seek out friends for their best shopping experience, meaning they seek opinion from others. They shop around for best prices, are attracted to discounted items and willing to wait for store sales promotion to enjoy some discount. They consider price before buying for products that they really like, but not too priceconscious. They can be best described as smart and practical shoppers. The majority of millennials in this cluster are female (55%), belonged to the 18-21 years of age bracket (58%), all single (100%), college students (42%), and have no income but allowance only (42%). The other millennials in this cluster are in the 22-25 (24%) and 26-30 (12%) age bracket, college graduates (46%), employed by private companies (24%), and earning Php8,001 and below (18%), Php8,001-15,000 and, Php15,001-30,000 (at 12% each), and Php30,001-50,000 and over Php100,000 (at 6% each) monthly.

### **The Similarities and Differences of the Identified Segments**

In terms of their values, the Contented and the Utilitarian are very similar in valuing (1) warm relationship with others, (2) self-fulfillment, (3) sense of belonging, (4) self-respect, and (5) being respected. They differ in terms of sense of accomplishment and fun and excitement in life which only the Contented segment values; and security and excitement which only the Utilitarian segment values. The Humble and the Proud segments are similar to the Contented and the Utilitarian, only in terms of self-respect and being respected, respectively.

### **Buying Preferences**

When analyzed according to their buying preferences, the identified segments, the Contented, the Utilitarian, the Humble and the Proud segments are similar in their attitude towards shopping. At least 70% of the millennials in Davao City have similar buying preferences. (1) They prefer brand new products (73.9%) and look for products with most value in terms of services and prestige (94.6%). They are more interested with products that offer a variety of choices (model and features) to choose from (86.1%). (2) They prefer conveniently-located store where they can easily find the needed product (92.1%). (3) With regards to stores, they consider overall store concept (atmospherics, amenities, merchandise) as very important for them to enjoy their shopping experience (86.1%); where there is good customer service (78.2%) and other customers' behavior

enhance their overall shopping experience (77.1%). They do not like to shop in a crowded or busy environment (79.3%). (4) They like friends sharing best value shopping experience (86.1%), except the Contented segment (67%). Interestingly, the Proud millennials indicated that they like it (100%). (5) They usually get attracted to discounted items (84.3%), will respond to sales promotions to enjoy some discount (77.9%), and shop around for best prices (77.9%). They prefer to use cash (78.9%),

The four (4) segments of millennials in Davao City are also similar in that less than 70% of them in each segment, enjoy shopping alone (62.1%), check out their online friends for latest information about shopping and hanging out activities (60.4%), prefer a small specialty store than a department store (55.7%), and are willing to pay more for product/brand that will make them look good (52.1%).

Moreover, less than 70% of them plan their day and time of shopping (64.6%), except the Contented who do not plan at all (52.1%); prefer to buy branded products (63.6%), with the Proud highest in number (73%); and don't think twice about the price when they find a product that they really like (62.5%), with the Contented (76%) also highest in proportion.

However, they vary in their attitude in some areas, such as in terms of sharing their best value shopping experience, at least 85% of each of the millennial segments, except the Contented, agree to that statement. Interestingly, only the Proud millennial with 73% of them, prefer to buy branded products. As to planning their shopping day and time, it was only the Contented millennials who indicated that they do not plan, meaning shopping is spontaneous. The rest of the segments indicated that they plan ahead, with Utilitarian segment at 78% in proportion. Generally, less than 70% of the respondents per segment indicated agreement to the statements that they prefer a small specialty store than a department store, with the Humble millennials split in their preference between a small specialty store and a department store; that they enjoy shopping alone, which means that a significant number of them, across different segments consider shopping with others; that they are willing to pay more for product/brand that will make them look good, which can be an indication that their motive is beyond looking good only; and that they check out online friends' opinion for shopping and hanging out activities. This last item indicates that, generally, they have a mind of their own, and they know what they want.

## **Conclusions and implications for future research**

Based on the findings, the following conclusions are arrived at: (1) The majority of the Millennials are female, belonging to the 18-21 age bracket, dominated by single, college students, and relied on allowance for their purchasing power. (2) The millennials in Davao City placed higher importance on the following values and are ranked respectively: a. Fun and Enjoyment in Life b. Sense of Accomplishment, c. Warm Relationship with Others, and d. Self-Fulfillment. However, the other values, Sense of Belonging, Excitement, Security, Self-Respect, and Being Respected, respectively, are still valued, although at a lesser intensity. (3) The Millennials in Davao City like to buy brand new products that offer most value in terms of services and prestige, and variety of choices (model and features) to choose from. They highly prefer conveniently located stores where they can easily find the needed product. They consider the overall store concept (atmospherics, amenities, merchandise) as very important to enjoy their shopping

experience; where the store personnel demonstrate high regard for customers; and other customers' behavior enhance their overall shopping experience. They do not like to shop in a busy and crowded environment. They like it when friends share with them their best value shopping experience. They shop around for best prices before actually deciding; they get attracted to discounted items, and wouldn't mind waiting for store sales promotion to enjoy discounts. They do not use credit or debit card in their purchases, but use cash instead. And, (4) Four segments were formed for psychographic segmentation. Segment 1 is labelled the Contented Millennials who are described as impulsive and spontaneous shoppers. Segment 2 is labelled Utilitarian Millennials, the rational shoppers. Segment 3 is labelled the Humble Millennials who are hedonic shoppers. Segment 3 is labelled the Proud Millennials who are smart and practical shoppers.

## **Recommendations**

Based on the findings and conclusions, the following are recommended:

Taking the millennials as a whole in an undifferentiated marketing strategy, mall marketers must be able to satisfy their needs in terms of their values and buying preferences. They should be provided a shopping experience that is not only satisfying but also delighting. a) Every store concept that will be adapted should consistently be fun and joyful. This includes atmospherics and amenities, in-store events, among others. For the atmospherics and amenities, retail management should continue to examine competitors and the industry, as a whole, for latest innovative styles and designs of stores or malls. Activities and events should be offered to sustain their patronage and encourage frequent visits. Marketing researches should be conducted to understand their changing lifestyle and tastes; b) As a corporate strategy, when expansions are considered, serious efforts should be exerted in the market study to determine the most convenient location according to their perception; c) Merchandise management should focus on stocking variety of choices for them. As they value services and prestige, marketers must continue to discover ways to delightfully surprise them, for example, redesigning paper bags, reusable packaging, etc.; d) Customer service should also be continuously improved by ensuring that genuinely friendly and welcoming front liners, e.g. guards, sales people, etc. interact with this type of customers. They should be accorded courteous service because they value good service. Trainings should be regularly conducted for frontline sales personnel; e) Promotional activities should be attractive enough especially those that encourage value shopping. When discounts are offered and sales promotion are advertised, significant savings should be highlighted. More innovative ways should be considered such as online discount coupons redeemable when making purchase should be made available to this target market. Seasonal sales should be advertised more loudly; f) Develop CRM or customer relationship management through loyalty card which will be offered for free exclusively for the millennials. As mentioned, they comprise 35% of the population both at the national and local level. As they will also grow from being a college student relying on allowance only to being gainfully employed, some years from now, their purchasing power over the years would also improve. This will enable the company to keep track of the spending and shopping behavior of this group and respond to their specific needs and wants.

In a differentiated marketing strategy, in which the Contented Millennials are considered as a target market, constituting 11.8% of the millennials, mall marketers should include the following in addition to those recommended in number 1. As they are impulsive and spontaneous

shoppers, latent needs and desires should be triggered. a) Stimuli such as music, colors, store smell, lighting and other amenities, and even the attire of the store personnel (i.e. uniform) should be configured such that it matches the desired store atmosphere or ambiance enticing to this group of customers; b) Mall marketers should also ensure that merchandise displays are attractive and strategically located in the store; and point-of-sale areas be filled with attractive displays to trigger impulse buying; c) Promote products with a theme about being contented or being pampered with the amenities in life; and d) Psychological pricing strategy should also be resorted to. Use of effective communication materials, i.e., color, font size and style, etc. should be used.

In a differentiated marketing strategy, in which the Utilitarian Millennials are considered as a target market, constituting 36.4% of the millennials, mall marketers should include the following in addition to those recommended in number 1. As they are rational and value-conscious shoppers, a) Marketers should ensure that there is a wide of variety of merchandises available for them. Effective and efficient inventory management and proper display should be a major consideration of the store management, such that products are easy to find and always available; and b) As they plan their day and time of shopping, changes in merchandise placement and store layout should be minimized so as not to upset them and waste their time.

In a differentiated marketing strategy, in which the Humble Millennials are considered as a target market, constituting also 38.6% of the millennials, mall marketers should include the following in addition to those recommended in number 1, except recommendation 1.e. As they are hedonic shoppers, who are not price-conscious, and least responsive to store sales promotion. a) Marketers should ensure that promotional efforts be focused on building their desired image and self-esteem. Opinion leaders, ideal personalities and exemplars, and pleasant experiences that they can identify with will be effective advertising and promotional concepts to adapt or to showcase; b) Specialty store operators can focus on them as their target market. They need to align their store image with the desired image of this group of customers to be effective.

In a differentiated marketing strategy, in which the Proud Millennials are considered as a target market, constituting also 11.8% of the millennials, mall marketers should include the following in addition to those recommended in number 1. As they are smart and practical shoppers, who are described as demanding customer, opinion-seeker and not too price-conscious, yet responsive to store sales promotion, a) Marketers should ensure that product availability is guaranteed, and new products are displayed and promoted; b) Store websites should be available for this market segment as they are also checking online for latest trends; and c) Price discounts and store sales promotions should be communicated to them in various media, such as through Facebook, Twitter, etc.

For Further studies: a) A follow-up study should be done to measure their perceptions regarding brands or companies and/or their buying preferences either through multi-dimensional scaling (MDS), multi-dimensional unfolding (MDU) or correspondence analysis; and b) A follow-up study should be done for deeper understanding of the buying preferences with their buying motives through triangulating the results of qualitative and quantitative studies.

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## Performance analysis of selected condominium-hotels (condotels) in Metro Manila

**Ma. Fluellen F. Bautista**

*De La Salle University*

ma.fluellen.bautista@dlsu.edu.ph

### Abstract

The paper examined the efficiency of four (4) condominium-hotels (condotels) in Metro Manila namely: Lancaster Suites and Hotel (Shaw Boulevard, Mandaluyong City), Astoria Plaza (Ortigas, Pasig City), Citadel Inn (Makati City) and Regalia Park Towers (Cubao, Quezon City). The researcher made a previous study examining the efficiency of the mentioned condotels from 2007-2010, but extended the study from the period of 2007-2014 to know whether time will have the effect on the the results of the previous study or not.

This study focused on the efficiency and productivity of selected condotels in Metro Manila choosing the years 2007-2014 as test period for efficiency. The condotels selected has a rooming capacity of 60-200 units available for hotel accommodation. The panel data were extracted from the financial statements of the four condotels covering the period of 2007-2014. Input variables tested are: 1) property and equipment as proxy for capital, 2) salaries and other labor costs representing labor, and 3) building and occupancy expenses as proxy for operational costs. The total revenue from operations of the selected condotels was considered as output variable.

The use of Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) were applied to measure the efficiency of the condotels.

Based on the analysis of data, as condotels age, they increase their scale by adding more inputs but failed to manage them well and become inefficient in operations. It does not equate in this study that the more inputs, the more output as well. It is recommended that with the increase in inputs, they must also consider the application of marketing strategies such as giving impeccable customer service and good value to customers to maintain their patronage.

**Key Words:** efficiency, condotel, DEA, Stochastic Frontier Analysis

## Introduction

Condominium-hotels, or aptly known as condotels, are emerging trends of hospitality as well as real estate investments in the Philippines. Investors on this real-estate property were enticed to buy a unit because of the financial returns they can get from renting their property and investments appreciate quickly. Also, the benefit of residing in a building with hotel facilities is a considered an additional perk when owning a unit.

A condotel, it is one in which the units—rooms or suites—are owned by individuals and then are rented out on a daily basis to transient guests (Higley, 2005). In some cases, renting to transient guests is mandatory but in others it is voluntary since the owners may want to use the units for themselves and/or their families year-round. From a legal standpoint, the two key attributes of a condo hotel are: “(1) the ownership by an individual of a separate interest in a discernible space (a condominium unit), and (2) the ownership of a proportional but undivided interest in the common area. The ‘common area’, owned and operated by condo owners as a ‘common interest development’, is where the hotel operator usually comes into play” (Waite, 2005).

In broader terms, condotels can be defined as residential condominium buildings offering the same facilities of a hotel and managed by either a hotel chain or the developer itself. They have comparable services to five-star hotels such as housekeeping, 24-hour telephone operator, laundry, concierge and hotel car services being offered to guests. The classifications of these establishments are mixed-use property model and condominium hotel operations model. The first model has units serving as primary residences to occupants and the rest of the units are dedicated to hotel use. The second model is considered under the hotel operations model since individual units are owned by different buyers and marketed as hotel accommodations. In this model, the condo unit sits empty until rented or occupied. At present, most condotels were being rented on the latter model, where owners let the operators of the condotel managed their properties and remit to them the revenue from rental income after deducting all operating expenses such as garbage fee, real estate tax payments, fire tax and other incidental expenses mandatory to owning a unit.

The condotels are classified by Department of Tourism as “Apartment-hotel” as of June 2012 but condotels covered by the study still fall under the category of hotel. Based on the classification, there are 13 apartment-hotels and 66 hotels in Metro Manila.

## Research Objective and Methodology

The researcher previously made a paper in the year 2012 examining the efficiency of four condotels in Metro Manila. These condotels were Lancaster Suites and Hotel (Shaw Boulevard, Mandaluyong City), Astoria Plaza (Ortigas, Pasig City), Citadel Inn (Makati City) and Regalia Park Towers (Cubao, Quezon City). The researcher recommended on the previous study that a longer test period should be done since operations of these establishments might improve over time and efficiency scores will vary. This prompted the researcher to revisit the previous study and include an extended period of 2007 to 2014 (from 2007-2010) focusing on financial performance analysis of the selected condotels so as to know whether the effect of time has change its scale efficiency.



This study focused on the efficiency and productivity of selected condotels in Metro Manila choosing the years 2007-2014 as test period for efficiency. The condotels selected has a rooming capacity of 60-200 units available for hotel accommodation. The panel data came from the financial statements of the four condotels covering the period of 2007-2014. Input variables to be tested are: 1) property and equipment as proxy for capital, 2) salaries and other labor costs representing labor, and 3) building and occupancy expenses as proxy for operational costs. The total revenue from operations of the selected condotels will be considered as output variable.

The use of non-parametric method, Data Envelopment Analysis (DEA) and parametric method, Stochastic Frontier Analysis (SFA) were applied to measure the efficiency of the condotels.

*DEA* is a non-parametric method (i.e. non-statistical) using linear programming technique that computes comparative ratio of multiple outputs to multiple inputs for each decision-making unit, also known as DMU (Avkiran, 2006). An efficiency frontier is being determined by set of points that shows the efficient combination of input and output that can be obtained in the systems examined (Cooper, Lewin and Seiford, 1994). The efficiency scores can range from 1-100%, where a score less than 100% of a certain DMU can be considered as inefficiency rating matching with other DMUs being studied. The upper limit is considered as 1 or 100% indicating that a DMU cannot exceed 100% efficiency rating.

The development of DEA could be attributed to Charnes, Cooper and Rhodes (1978). It is described as a “mathematical programming model applied to observational data that provides a new way of obtaining empirical estimates of relations, such as the production functions and/or efficient production possibility surfaces, which are cornerstones of modern economics”. It is considered as a benchmarking technique to evaluate performance efficiency of selected DMUs. The point of reference in efficiency is the comparison of each DMU with other DMUs and identifying units that are operating efficiently based on a given actual operating results. It also measures the magnitude of inefficiency of the inefficient units as compared to the most efficient unit (Sherman and Zhu, 2006).

*SFA* is also used in the efficiency estimation and this measurement began with Farrell (1997), who defined a simple measure of firm efficiency that could account for multiple inputs. He pioneered in dividing cost efficiency into technical efficiency and allocative efficiency. Technical efficiency evaluates the ability of the firm to obtain maximal output from a given set of inputs and the allocative efficiency evaluates the ability of the firm to use the inputs in optimal proportions, given their respective prices and production technology. The use of a single example involving firms that use two inputs to produce a single output, under the assumption of constant returns to scale, best illustrates his ideas. (J.L. Hu et. al, 2010).

### **Significance of the Study**

Evaluation of efficiency in hotel industry is very vital because of fierce and cut-throat competition. Understanding the factors that affect efficiency in operations could help operators by understanding the combination of resources that will generate greater output. The long-run

survival of firms will be greatly affected if managers will not comprehend the measurement of efficiency.

### Scope and Limitations

In the previous study, the researcher accounted for nine (9) condotels already operating in various locations in Metro Manila. These are: 1) Millenia Suites, 2) Astoria Plaza, and 3) Malayan Plaza in Ortigas City; 4) Lancaster Suites in Shaw Boulevard, Mandaluyong; 5) Regalia Park Towers, and 6) Gardenheights Condominium in Quezon City; 7) Citadel Inn, 8) BSA Mansion and 9) A. Venue Suites in Makati City. The researcher accounted for these establishments by searching the internet for possible condotels in different areas of Metro Manila. Out of these condotels, only four (4) of them has the complete set of data for the period test period of 2007 to 2010 and the rest were excluded. In the extended test period of 2011 to 2014, Regalia Park Towers was eliminated due to constraints in data. Its financial statements submitted at SEC were up to 2012 only.

The requirement of DEA on the application of the procedure is stated and quoted as:

*".....the number of DMUs is expected to be larger than the product of number of inputs and outputs (Darrat et al. 2002; Avkiran 2001) in order to discriminate effectively between efficient and inefficient DMUs. However, there are many examples in the literature where DEA has been used with small sample sizes. The sample size should be at least 2 or 3 times larger than the sum of the number of inputs and outputs."*

In the case of this study, the number of DMUs is 3 which equals to the product of 3 input variables multiplied to one input variable. The data clearly met the minimum requirement in the application of DEA. The above cited considerations showed that DEA can be used with small sample sizes because the researcher was forced with the availability of the healthiest set of data. What is important is the number of degrees of freedom (d.f.) to be retained. In this study, 1 output multiplied to 3 inputs equals 3. 3 multiplied to 2 are 6 greater than the number of observations (3 condotels and 8 years = 24 observations). Subtracting  $K=6$  from 24 observations, the degree of freedom obtained is 18. This d.f. is important in determining the t-values in the statistical table during the use of SFA.

The basis of the researcher in classifying the condotels' operation is based on their rooming capacity. Based on the study of Jan Warnken et. al about multi-titled accommodation complexes (2008), where an establishment or residential complexes is considered large size if it has building characteristics of more than 60 rooms. These rooms are a mix of serviced rooms, dual and single key apartments and with other facilities such as conferencing. This has become the basis of the researcher in choosing the condotels since the sample respondents has the rooming capacity of 60-200 units. Other establishments mentioned in the study are also excluded since their operations can be considered as small scale in terms of rooms available for hotel operations. Though condotels are not yet classified as high-scale, medium scale and low scale due to its lack of accreditation, the researcher considered the selected condotels as high-scale in operations in terms of their rooming capacity of 60-200 rooms. Lancaster Suites has 200 rooms; Citadel Inn and

Astoria Plaza with 110 rooms, respectively; and lastly, Regalia Park Towers with 60 rooms available for hotel operations.

This study mainly focused on the hotel operations of these condotels though they are operating in a “mixed-use property” model, where some unit owners are living in the facility while other units are turned by the owners for rental to hotel operators.

### **Performance Efficiency Measurement Practices**

In measurement of efficiency, most managers correlate it with productivity. According to Stevenson and Chuong (2014), productivity is an index that measures output (goods and services) relative to the input (labor, materials, energy, and other resources) used to produce them. By getting the productivity ratio, one can gauge whether inputs of production were effectively used. In assessing a firm’s efficiency, multiplicity of inputs and outputs need to be considered (Wu, 2006; Cook and Sieford, 2009). Several researchers studied efficiency measurement and the two methods have been used primarily to estimate this, primarily DEA and SFA.

The study of Jia-Jane Shuai and Wei-Wen Wu (2011) evaluated the hotel’s websites in Taiwan considered inputs such as number of guestrooms in a hotel, number of full-time employees, and operating expenses (employees’ salaries, food and beverage cost, room costs, utilities, maintenance fees and other relevant operating costs). The outputs selected were: (1) total revenues generated from rooms; and (2) total revenues generated from food and beverages. Through DEA analysis, it showed that internet marketing can affect greatly the operating performance of tourist hotels.

The study of Assaf, Barros and Josiassen (2010) mentioned the concept of metafrontier which can “ensure that all heterogeneous firms or groups are assessed based on their distance from a common and identical frontier.” The metafrontier can be simply considered as an envelop of all possible frontiers that might arise from the heterogeneity between firms (Rao et al., 2003). Other studies on hotel efficiency combined small and large hotels leading to inaccurate results of DEA and SFA due to different environmental characteristics such size, location and type of ownership. The metafrontier approach, thus, provide a somewhat standardized boundary for all firms with dissimilar and uncontrollable environmental characteristics. This study considered number of rooms as proxy for capital cost, number of full time equivalent employees in the room division, number of full time employees in food and beverage division, and number of full time equivalent employees in other departments. Outputs are total room revenues, total food and beverage revenues, total of other revenues (revenues from lease of store spaces, laundry, swimming pool, ball courts, barber shop, salons and bookstores), market share for each hotel (percentage of hotel guest out of the total guests received) and employees’ performance (number of guest per employee). The impact of size of a hotel was a clear determinant of hotel efficiency. Large hotels had higher efficiency and it can be hypothesized that large size has a positive relationship with firm profits and firm success.

In 2011, Assaf and Barros analyzed the performance of Gulf hotel industry using Malmquist index with bias correction. This method is also a DEA approach. Inputs considered are: (1) number of outlets as proxy for capital; (2) number of full-time equivalent employees; and (3)

other operational costs such as administrative costs, utilities and rent. Two outputs considered are: operational revenues, and the annual occupancy rate. The paper came up with a result that increase in revenue for lower occupancy rate and other hotels an increase in occupancy rate for lower revenues. The findings showed that in difficult economic times, hotels usually decrease their room rate in order to maintain high occupancy.

The thesis made by Christine Mercado in 2009 measures efficiency of selected deluxe hotels by using DEA and included input variables such as revenue, food and beverage cost and receivables. Output variables considered are net income, inventory and sales. Finding of her study showed that improvements in the output variables and the reduction in the output variables are essential for the efficiency of the hotels.

The study of Jin-Li Hu et. al (2010) employed one-stage stochastic frontier approach (SFA) to simultaneously estimate cost efficiency scores and factors of cost inefficiency of 66 international tourist hotels in Taiwan during 1997-2006. The three inputs considered are the price of labor, price of food and beverage and the price of other operations. The outputs are the room, revenue, food and beverage revenue, and other operations' revenue. The results showed that Taiwan hotels are 91.15% cost efficient. Chain hotels are more efficient than independent hotels. Location also affects efficiency since those hotels near international airports and conveyance were more cost efficient than hotels located in non-metropolitan area.

Another study in the managerial efficiency of Taiwan hotels by Ching-Fu Chen (2007) uses SFA with three inputs (labor, food and beverage, and materials) and total revenue as output. Findings showed that hotels in Taiwan are 80% efficient in operations. Also, the perspective of product mix and sources of customers revealed that the hotels targeting the leisure market have more advantages than business hotels in effectively utilizing their operations resources and turning into higher managerial efficiency. No difference in efficiency had been found between the large-scale and small-scale hotels.

The review of related journals showed that DEA is extensively used in the study of hotel efficiency and other industries. The use of SFA is not yet widely applied in the hotel industry but rather on other industries. The researcher opted to apply the two methods: DEA, which is a nonparametric, linear programming technique that enables the development of an output-to-input ratio system to handle multiple inputs and outputs (Yu and Lee, 2009); and SFA, on the other measures efficiency in a parametric or statistical method, where deviation from the production frontier is not only accounted by technical inefficiency but also due to measurement errors and statistical noise. Combining the two methods in the evaluation of efficiency will make the study more robust and clear-cut since SFA will validate uncertainties not answered by DEA.

The variables chosen in the study were based on literatures reviewed. Input variables such as "capital," "salaries," and "operating expenses" were derived from the studies of Shuai and Wu (2011), and Assaf et al. (2010). Total revenue as output variable was derived from the studies of Hu et al. (2010) and Chen (2007).

## Data Analysis and Discussions

### Efficiency of condotel operations

Table 1 shows the summary of condotel's cooperation. The first 4 years (2007 – 2010) showed that the condotels were better off than the last 4 years (2011 – 2014). Astoria Plaza has a better scale condition in the first four years (scale = 1.000) than in the last 4 years (scale = 0.999). Citadel was better off in the last four years (2011 – 2014) of operation than their first four years (2007 – 2010). Its cost inefficiency (crste = 0.904) was caused by bad administration of resource inputs (vrste = 0.905) but maintained an advantageous scale of operation (scale = 1.000).

Lancaster Suites was better off during the first four years of operation (2007 – 2010). The last four years (2011 – 2014) indicated decreasing returns to scale. This means that their total income from operations was declining from 2011 – 2014. It also means that they have increased their level of scale of operation to attract occupancy. Their disadvantageous scale condition was influenced by cost inefficiency and managerial inefficiency in using their inputs. Later on in the succeeding section the inefficient allocation of inputs can be seen.

On the average, the condotels performed better during the first four years than the last four years. Cost inefficiency (crste = 0.953) was caused by inefficient administration of inputs (vrste = 0.959) and disadvantageous scale condition (scale = 0.993), say decreasing returns to scale as represented by increase in overhead costs.

Table 1  
*Efficiency Summary of the condotel operation*

Efficiency Summary					
Firm	Year	crste	vrste	scale	RTS
ASTORIA PLAZA	2007	0.963	0.963	1.000	-
ASTORIA PLAZA	2008	1.000	1.000	1.000	-
ASTORIA PLAZA	2009	0.986	0.986	1.000	-
ASTORIA PLAZA	2010	0.998	1.000	0.998	drs
2007 - 10	mean	0.987	0.987	1.000	
ASTORIA PLAZA	2011	1.000	1.000	1.000	-
ASTORIA PLAZA	2012	0.991	0.994	0.997	irs
ASTORIA PLAZA	2013	0.918	0.918	1.000	-
ASTORIA PLAZA	2014	0.908	0.908	1.000	-
2011 - 14	mean	0.954	0.955	0.999	
CITADEL INN	2007	0.967	0.968	1.000	-
CITADEL INN	2008	1.000	1.000	1.000	-
CITADEL INN	2009	0.986	0.990	0.997	irs
CITADEL INN	2010	0.946	0.973	0.973	irs
2007 - 10	mean	0.975	0.983	0.993	

Efficiency Summary					
CITADEL INN	2011	0.946	0.948	0.998	drs
CITADEL INN	2012	0.941	0.941	1.000	-
CITADEL INN	2013	0.869	0.869	1.000	-
CITADEL INN	2014	0.861	0.862	1.000	-
2011 - 14	mean	0.904	0.905	1.000	
LANCASTER SUITES	2007	0.960	1.000	0.960	irs
LANCASTER SUITES	2008	1.000	1.000	1.000	-
LANCASTER SUITES	2009	1.000	1.000	1.000	-
LANCASTER SUITES	2010	1.000	1.000	1.000	-
2007 - 10	mean	0.990	1.000	0.990	
LANCASTER SUITES	2011	0.946	0.949	0.996	drs
LANCASTER SUITES	2012	0.941	0.974	0.966	drs
LANCASTER SUITES	2013	0.873	0.900	0.970	drs
LANCASTER SUITES	2014	0.861	0.872	0.988	drs
2011 - 14	mean	0.905	0.924	0.980	
Grand	mean	0.953	0.959	0.993	

### Resource use of Condotel

The bad performance of condotels can be illustrated by excess input usage in Table 2. Total income from operations was achieved by the condotels from 2007 to 2014. Property and equipment costs were efficiently allocated (with zero slack). However, all of the condotels incurred excessive use of salaries and other labor costs and building and occupancy expense from the last 8 years.

Astoria Plaza have lesser cost incurred during the last four years (2011 – 2014) because of shifting from decreasing return to scale (drs) to increasing return to scale (irs) coupled with constant returns to scale (crs or dash line) operation. Building and occupancy expenses also decrease from an average of P13,725.97 to P11,752.14. Property and equipment and salaries and other labor costs were efficiently allocated.

Citadel Inn had a good first four years of operation under constant and increasing return to scale. However, Citadel Inn's decreasing return to scale (drs) in the last 4 years caused them to have excessive usage of inputs (salaries & other labor costs and building & occupancy expenses). Salaries and related costs increase from P1,351.80 within 2007 – 2010 to P20,076.11 in the last four years. Building and occupancy expense incurred P7,128.54 excess every year.

Table 2

*Summary of Output and input slacks for condotels*

Summary of Output and Inputs variables					
Firm	Year	Total Income from Operations	Property and Equipment	Salaries and other labor costs	Building and occupancy expenses
ASTORIA PLAZA	2007	0	0	0.00	27460.54
ASTORIA PLAZA	2008	0	0	0.00	0.00
ASTORIA PLAZA	2009	0	0	2503.85	27443.32
ASTORIA PLAZA	2010	0	0	0.00	0.00
2007 - 10	mean	0	0	625.96	13725.97
ASTORIA PLAZA	2011	0	0	0.00	0.00
ASTORIA PLAZA	2012	0	0	0.00	18668.75
ASTORIA PLAZA	2013	0	0	0.00	14616.00
ASTORIA PLAZA	2014	0	0	0.00	13723.83
2011 - 14	mean	0	0	0	11752.14
CITADEL INN	2007	0	0	814.68	0.00
CITADEL INN	2008	0	0	0.00	0.00
CITADEL INN	2009	0	0	0.00	0.00
CITADEL INN	2010	0	0	4592.51	0.00
2007 - 10	mean	0	0	1351.80	0.00
CITADEL INN	2011	0	0	22991.73	22699.52
CITADEL INN	2012	0	0	18235.52	0.00
CITADEL INN	2013	0	0	18894.31	0.00
CITADEL INN	2014	0	0	20182.89	5814.65
2011 - 14	mean	0	0	20076.11	7128.54
LANCASTER SUITES	2007	0	0	0.00	0.00
LANCASTER SUITES	2008	0	0	0.00	0.00
LANCASTER SUITES	2009	0	0	0.00	0.00
LANCASTER SUITES	2010	0	0	0.00	0.00
2007 – 10	mean	0	0	0.00	0.00
LANCASTER SUITES	2011	0	0	37852.84	51893.34
LANCASTER SUITES	2012	0	0	31759.98	36938.03

Summary of Output and Inputs variables					
Firm	Year	Total Income from Operations	Property and Equipment	Salaries and other labor costs	Building and occupancy expenses
LANCASTER SUITES	2013	0	0	46586.29	20240.24
LANCASTER SUITES	2014	0	0	54348.78	23258.34
2011 - 14	mean	0	0	42636.97	33082.49
Grand	mean	0	0	10781.81	10948.19

Lancaster Suites enjoyed efficient operations at constant returns to scale (dash line) during the first four years (2007 – 2010). It has no excesses in the use of inputs and no shortage in attaining the total income from operation. However, At decreasing return to scale operation, salaries & other labor costs and building and occupancy expense increased drastically to P54,348.78 and P23,258.23 per year respectively.

On the average, a condotel incurred excesses in salaries & other labor cost and building and occupancy expense in the amount of P10,781.81 and P10,948.19 every year, respectively. The above findings implied that condotels were better off operating at constant returns to scale (crs) to bring down their operation costs to zero. The findings showed that condotels have had efficient performance during the first four years (2007 – 2010) than the last four years (2011 – 2104).

The results of this study is the same with the findings of Oliviera et.al in their study on the efficiency of Portuguese Hotels, whereas the hotels show huge levels of inefficiency due to excess use of inputs particularly the number staff employed in operations(Oliveira, Pedro, & Marques, 2013).

## Conclusions and Recommendations

The higher scale of operation of the condotel with corresponding excessive allocation of inputs contributed to decline in total income from operation.

The above findings indicated that increasing the use of major inputs (property and equipment, salaries & other labor cost, and buildings and occupancy expense) helps achieve their target total income from operation. But as more inputs were added, specifically salaries and labor, inefficiency in operations will be the result. This was the case of Lancaster Suites where a decreasing returns to scale was experienced due to the excessive use of salaries and building expenses. The more inputs used, revenues were decreased instead of achieving break-even.

As condotels grow older in the business, lesser income was realized. The obsolete technology and refurbishing requirements increased the building and occupancy expenses contributing to a decrease in income. It is also costly to renovate and refurbish old facilities but it could provide greater revenues in the long-run. Establishments with worn-out carpet and furniture received bad reviews from customers, thus decreasing patronage and repurchase intent.



It is recommended that condotels to be cost efficient in operations must have a good management of inputs and continue to retain the good condition of their facilities as they age. Condotels under study incurred excess labor costs due to excessive staffing. It could be inferred that hiring more staff to provide better services can be inefficient in terms of resource use. Thus, condotel operators must be wary on hiring additional staff, particularly on off-peak season since the cumulative effect is labor cost inefficiency.

Also, other factors such as good marketing, service and value to customer must be considered. Marketing efforts should be enhanced through partnerships with travel agencies and transport operators since they can promote these accommodations to tourist availing their services. With service and value, customer service must be enhanced by providing trainings to its staff on how to provide memorable and commendable service. Hotel staffs that are considered as friendly, helpful and efficient are highly appreciated by clients, thus receiving good feedback and could be promoted through reviews mentioned in different social media platforms. With this, they can maintain loyalty of customers and achieve better operations.

However, this paper should be used with caution since condotels were chosen purposively and not randomly. The selected condotels may not represent the universe of the sub-industry and should not be used as the basic guide in making decisions. For future research, the study should include other condotels with small scale operations since the samples were operating in high-scale based on the number of rooms available for occupancy. It is also worth noting that there are new players in the industry and must be included in the study to achieve more robust results.

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1. **Novelty:** The contributions should be original and unpublished. They must also currently be not under consideration in any other journal.
2. **Number of pages and layout**
  - a. Maximum of 20 pages (8.5" x 11" paper), inclusive of tables, figures, references, and appendices
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## The Contributors



**Ms. Ma. Fluellen F. Bautista**

*De La Salle University*

ma.fluellen.bautista@dlsu.edu.ph

Ms. Fluellen F. Bautista was a former full-time faculty at De La Salle University-Ramon V. Del Rosario College of Business and currently taking her doctorate study, Doctor of Philosophy in Business, at the same institution. She graduated with a degree of Bachelor in Accountancy at Polytechnic University of the Philippines (PUP) and has taken Master in Business Administration at University of Santo Tomas (UST). Her research interest revolves on the topics of entrepreneurship, business management and finance.



**Ms. Geraldine Bernardo**

*De La Salle University*

geraldine.bernardo@dlsu.edu.ph

Ms. Geraldine “Dina” Go-Bernardo holds a Master’s degree from the Asian Institute of Management and has business interests in manufacturing, logistics and startups. Dina was also the former team captain of the Philippine National Women’s Dragon Boat Team, later becoming the first female executive director of the Philippine Sports Commission. She is currently a lecturer at the De La Salle University College of Business and pursuing research in the realm of sport governance, sport management and sport for development.



**Dr. Rodilina B. Marte**

*Ateneo de Davao University*

rbmarte@addu.edu.ph

Dr. Marte is currently the Chair of the Marketing Department, School of Business and Governance, Ateneo de Davao University (AddU). She has 18 years’ experience as Marketing professor at AddU. She completed her Bachelor of Business in Marketing in USQ Australia, MBA at AddU, MA in Economics and Entrepreneurship for Educators at University of Delaware, USA, and DBA at AddU. She has various research and consultancy engagements. Her research interest includes Consumer Behavior, Service Marketing, Social Marketing, Psychographic Segmentation and Entrepreneurship. She co-authored ‘Principles of Marketing for Senior High School (C&E Publishing).

**Dr. Lauro Silapan**

*University of San Carlos*  
lrsilapan@gmail.com

Dr. Silapan is an assistant professor of the Business Administration Department of the School of Business and Economics of University of San Carlos. He obtained his degree in Doctor in Business Administration (DBA) from the Ramon V. del Rosario College of Business of De LaSalle University, Manila, Philippines. His research interests are in the fields of entrepreneurship, business and management, and innovation.

**Dr. Danilo M. Te**

*Ateneo de Davao University*  
dmte@addu.edu.ph

Dr. Danilo Te is the former dean of the School of Business and Governance (SBG), Ateneo de Davao University. He teaches marketing management and marketing research in the undergraduate programs and marketing models in the doctoral program of SBG. Dr. Te is active in training research and applied statistics to students and faculty. He has also done extensive research in marketing. He is also active in advising doctoral and masteral candidates in their dissertation or thesis writing.

**Dr. Benito Teehankee**

*De La Salle University*  
benito.teehankee@dlsu.edu.ph

Dr. Benito L. Teehankee is a Full Professor in the Management and Organization Department, and is the Head of the Business for Human Development Network (BHDN), a unit of the Center for Business Research and Development of the Ramon V. del Rosario College of Business, De La Salle University. His recent publications include "Critical Realist Action Research and Humanistic Management Education" in the Humanistic Management Journal (2018) and "Institutional entrepreneurship: Transforming management education for participatory human development in the Philippines" in Action Research Cookbook (2017).

**Dr. Raymond Vergara**

*De La Salle University*  
raymond.vergara@dlsu.edu.ph

Dr. Vergara is an Associate Professor under the Marketing and Advertising Department of the Ramon V. del Rosario College of Business of De La Salle University. He took his Doctor of Business Management at Holy Angel University. His research interests include crowdfunding, events management, Disney, and crowdsourcing. He is a passionate educator of events who wishes to give back to the community.



