

An Innovative Ambidexterity Typology of Filipino Agripreneurs and Its Implications for Regional Development Policies¹

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Abstract

Innovative behavior of agripreneurs can be classified as exploitative (i.e., slow and incremental), exploratory (i.e., fast and radical), or ambidextrous (i.e., in between exploitative and exploratory). This policy brief presents a typology of Filipino agripreneurs based on four dimensions of innovative ambidexterity, namely: product innovation, market competition, technology innovation, and international market development. A total of 174 Filipino agripreneurs from different administrative regions in the Philippines who were included in the Global Entrepreneurship Monitor Adult Population Surveys (GEM APS) from years 2013 to 2015 comprised the sample of this study. Two major clusters were initially generated, but after further sub-clustering, the following classifications of Filipino agripreneurs emerged: (1) generally exploratory; (2) purely exploitative; and (3) mixed exploitative. A closer look on the data reveals that many of the highly exploratory agripreneurs came from the Autonomous Region in Muslim Mindanao (ARMM) and Southern Mindanao. On the other hand, most of the mixed exploitative agripreneurs were from CALABARZON, Caraga, and MIMAROPA. It is recommended that in order for Philippine agripreneurship to be the sustainable,

government policies and programs must seek to develop exploratory as well as ambidextrous behavior among agripreneurs by focusing on regional factors associated with innovative behavior, such as gross regional domestic product (GRDP), population, water infrastructure, typhoon occurrence, and unemployment rate.

Background

The current trend of upstream businesses (e.g., farm production) going into downstream activities (e.g., processing and marketing) highlights the opportunities for achieving higher value addition in agribusiness. However, the sad reality is that most farming communities in the country still remain impoverished and receive the least portion of the additional value created. In addition, there are overwhelming challenges that have emerged from regional economic integration, such as diminishing regional border restrictions.

One strategy needed for an agricultural sector to be competitive amid stiffer competition is to innovate. Innovation, as applied to agripreneurship, may be incremental and slow (exploitative) or radical and fast (exploratory). March (1991, 71) defined

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exploitation as activities involving “refinement, choice, production, efficiency, selection.” On the other hand, exploration was characterized as activities necessitating “search, variation, risk taking, experimentation, play, flexibility, discovery” (ibid.). Jansen (2005) claims that in terms of firm performance implications, exploratory innovation can lead to long-term benefits. Exploratory innovation can also pave the way towards greater value addition.

Innovation in general can be any of the following forms: product innovation, market competition, technology innovation, and international market development. Under each dimension, exploitative as well as exploratory behaviors can be manifested. Product innovation, which involves the improvement of the features and quality of agriculture-related products, is considered as exploitative behavior. On the other hand, creating a totally new agricultural product that has never been introduced in the market is an example of exploratory behavior. In terms of market competition, enhancing usage in markets currently tapped by players in the industry can be classified as exploitative behavior, while targeting totally unexplored geographical locations or market segments by any player is exploratory behavior. In relation to technology innovation, adopting a new technology that has already existed for quite some time and has been tested in the field can be considered as exploitative, whereas the adoption of recently-invented technology is exploratory behavior. Lastly, tapping an overseas market by a small fraction or through indirect channels is exploitative. Meanwhile, exporting a substantial proportion of one’s produce through organized channels can be considered as a manifestation of exploratory behavior.

Thus, in this discussion, innovation dimensions are viewed using an innovative ambidexterity lens. Similar to the exploratory innovation posture, an ambidextrous innovation posture can also translate to achieving longevity in the long run (Karrer and Fleck 2015).

Methodology

This study used the Global Entrepreneurship Monitor Philippine Economy Adult Population Survey (GEM APS) from 2013 to 2015. The final sample only included established entrepreneurs involved in agri-

TABLE 1 Frequency of Filipino agripreneurs in the GEM APS 2013 to 2015 according to subsector

Stage in the value chain	Subsectors				Total
	Fruits & crops	Poultry & livestock	Fisheries	Forestry	
Input	1	2	0	0	3
Production	16	10	2	0	28
Post-harvest/processing	23	23	4	4	54
Distribution	46	10	28	5	89
Total	86	45	34	9	174

Source: Global Entrepreneurship Monitor Adult Population Surveys (GEM APS) 2013–2015

related ventures across the value chain (see **TABLE 1**). A total of 174 Filipino agripreneurs comprised the sample in this study. They were randomly selected and stratified from a list of entrepreneurs across the different administrative regions in the Philippines. The majority of the sampled agripreneurs were involved in fruits and crops (49%) and in distribution (51%).

To supplement the GEM APS data, published regional and provincial databases from government and non-government websites (e.g., Philippine Statistics Authority, Philippine Ports Authority, Climate Hazards Group InfraRed Precipitation with Station data) were also utilized.

Findings

Based on their ambidexterity behavior across the four dimensions (i.e., product innovation, market competition, technology innovation, and international market development), clusters of Filipino agripreneurs were derived using Python, a general-purpose programming language. **FIGURE 1** (on the next page) shows that the optimal number of clusters using the elbow method is two (2).

TABLE 2 (on next page) presents the innovative ambidexterity posture of Cluster 1 Filipino agripreneurs. An examination of the first cluster (composed of 58 Filipino agripreneurs) revealed that the members were generally characterized as manifesting exploratory behavior for almost all the

FIGURE 1 Optimal number of Clusters k of GEM APS 2013–2015 Filipino agripreneurs (derived using Python)

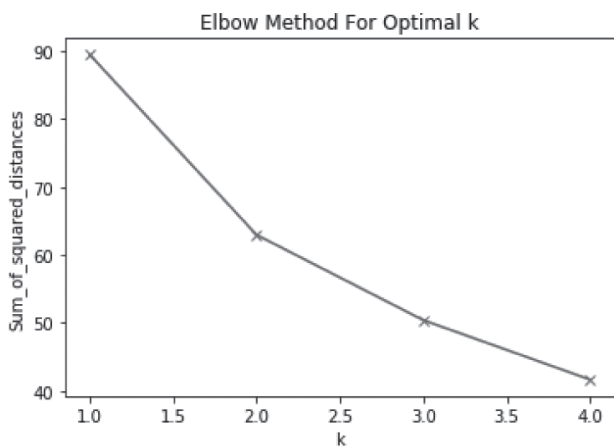


TABLE 2 Cluster 1 of Filipino Agripreneurs from GEM APS 2013–2015

Innovative ambidexterity dimension	Exploitative	Ambidextrous	Exploratory
Product innovation (n=170)	12.0	32.5	74.5
Market competition (n=172)	41.6	25.5	22.2
Technology innovation (n=154)	30.8	37.8	42.3
International market development (n=170)	32.5	30.0	52.9

Note: Percentages are of innovative posture among agripreneurs in Cluster 1 with respect to original sample size (n)

innovation dimensions except market competition and technological innovation (where only less than half are exploratory).

On the other hand, the second cluster was comprised of 112 Filipino agripreneurs who exhibited a dominantly exploitative behavior. As the number of agripreneurs under the cluster was large, subclustering within Cluster 2 was done. The subclustering produced two sub-clusters, namely the purely exploitative and the mixed exploitative subclusters. The purely exploitative agripreneurs manifested an exploitative behavior across all the

four dimensions. Meanwhile, in the case of the mixed exploitative behavior group, there were agripreneurs who were exploitative in terms of the dimensions except for market competition, which was dominated by ambidextrous behavior (see **FIGURE 2** below).

Therefore, based on the two-stage clustering, Filipino agripreneurs may be classified as

FIGURE 2 Cluster 2 (Dominantly Exploitative) Agripreneurs from GEM APS 2013–2015

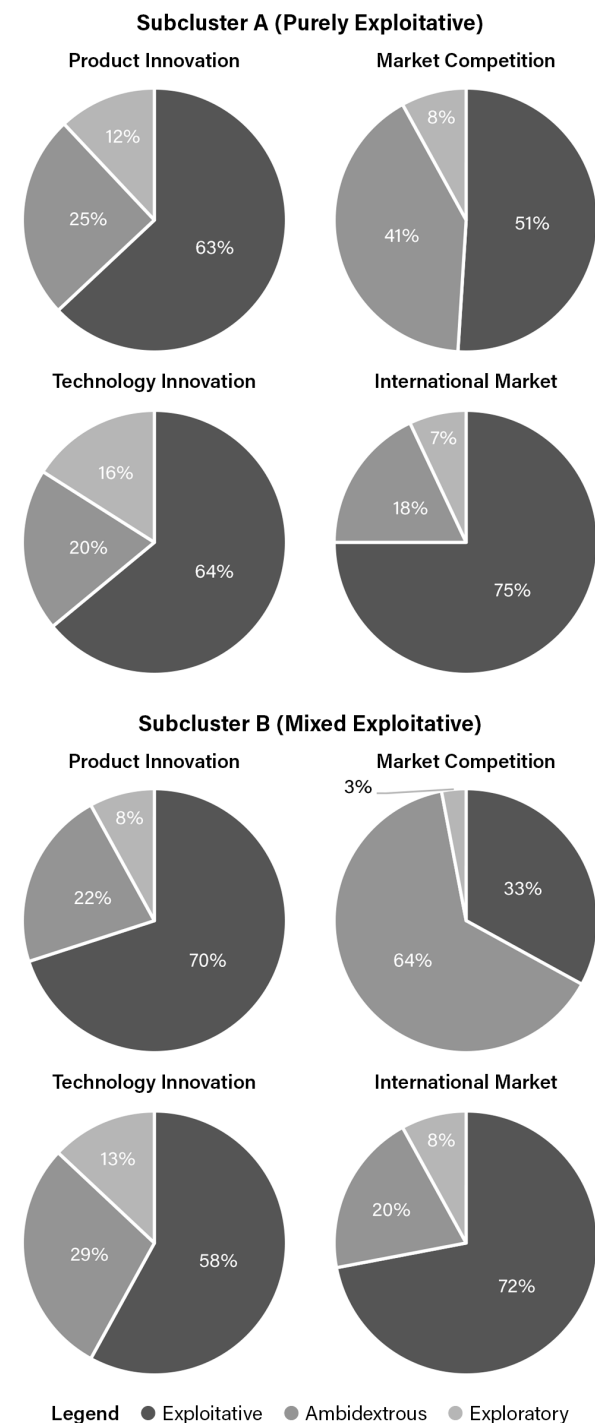


TABLE 3 Clustered agripreneurs in administrative regions in the Philippines

Region	Generally Exploratory (Cluster 1)		Dominantly Exploitative (Cluster 2)	
	Freq	%	Freq	%
ARMM	3	60.0	2	40.0
Bicol	4	33.3	8	66.7
Cagayan	2	33.3	4	66.7
Calabarzon	2	11.1	16	88.9
Caraga	0	0.0	3	100.0
Central Luzon	3	33.3	6	66.7
Central Mindanao	3	50.0	3	50.0
Central Visayas	3	27.3	8	72.7
Eastern Visayas	3	42.9	4	57.1
Ilocos	6	46.2	7	53.8
Mimaropa	2	40.0	3	60.0
NCR	9	31.9	14	60.9
North Mindanao	5	41.7	7	58.3
South Mindanao	4	80.0	1	20.0
West Mindanao	1	5.9	16	94.1
West Visayas	8	40.0	12	60.0

Region	Purely Exploitative (Subcluster A)		Mixed Exploitative (Subcluster B)	
	Freq	%	Freq	%
ARMM	1	50.0	1	50.0
Bicol	5	62.5	3	37.5
Cagayan	2	50.0	2	50.0
Calabarzon	6	37.5	10	62.5
Caraga	1	33.3	2	66.7
Central Luzon	6	100.0	0	0.0
Central Mindanao	3	100.0	0	0.0
Central Visayas	5	62.5	3	37.5
Eastern Visayas	3	75.0	1	25.0
Ilocos	7	100.0	0	0.0
Mimaropa	0	0.0	3	100.0
NCR	13	92.9	1	7.1
North Mindanao	6	85.7	1	14.3
South Mindanao	0	0.0	1	100.0
West Mindanao	11	68.8	5	31.3
West Visayas	9	75.0	8	25.0

(1) generally exploratory; (2) purely exploitative; and (3) mixed exploitative.

A qualitative examination of the geographical distribution of the agripreneurs exhibiting certain innovation behaviors was also done (see **TABLE 3** above). Based on the data, many of the highly exploratory agripreneurs came from the Autonomous Region in Muslim Mindanao (ARMM) and Southern Mindanao, whereas most of the mixed exploitative agripreneurs were from Cavite, Laguna, Batangas, Rizal and Quezon (CALABARZON), the Caraga Administrative Region, and (Occidental and Oriental) Mindoro, Marinduque, Romblon, and Palawan (MIMAROPA).

Policy recommendations

The results of the study suggest that government policies must seek to develop exploratory as well

as ambidextrous behaviors among entrepreneurs to ensure the long-term sustainability of Philippine agripreneurship. In a previous study made by one of the authors (De Castro 2020), the significant factors associated with innovative ambidexterity among agripreneurs were gender, network, gross regional domestic product (GRDP), population, water infrastructure, typhoon occurrence, and unemployment rate.

The conditions necessary for exploratory and ambidextrous postures to flourish are most likely already in place in the regions where most of the exploratory and mixed exploitative agripreneurs are located. This, however, needs to be further investigated and verified.

In relation to the dimension of market competition (where the generally exploratory group were found to still be exploitative, and where the mixed exploitative group were ambidextrous),

there were more financial programs and more marketing-related trainings for women agripreneurs (who emerged to be the more exploratory gender). Furthermore, the provision of opportunities for the development of better networks among the agripreneurs and the other relevant actors and institutions along agricultural supply chains could facilitate technology innovation.

As for regional development policies, De Castro (2020) noted that less-congested regions fared high in terms of technology innovation. This implies that agripreneurs in these regions might have been encouraged to innovate and not imitate. A resulting recommendation is that regional government units should undertake strategic urban and rural planning. Moreover, as typhoons also hinder technology innovation, climate-resilient infrastructure is also necessary.

Meanwhile, in regions with high unemployment rates, regional government agencies must extend more substantial start-up enterprise support and opportunities to those who have the potential to capture international markets. Lastly, in relation to GRDP as a predictor, it is recommended that government expenditures, funding, and support be increased across all administrative regions.

In executing these policy recommendations, should a nationwide implementation not be feasible, priority should be given to the regions with more exploratory and mixed exploitative agripreneurs. ■

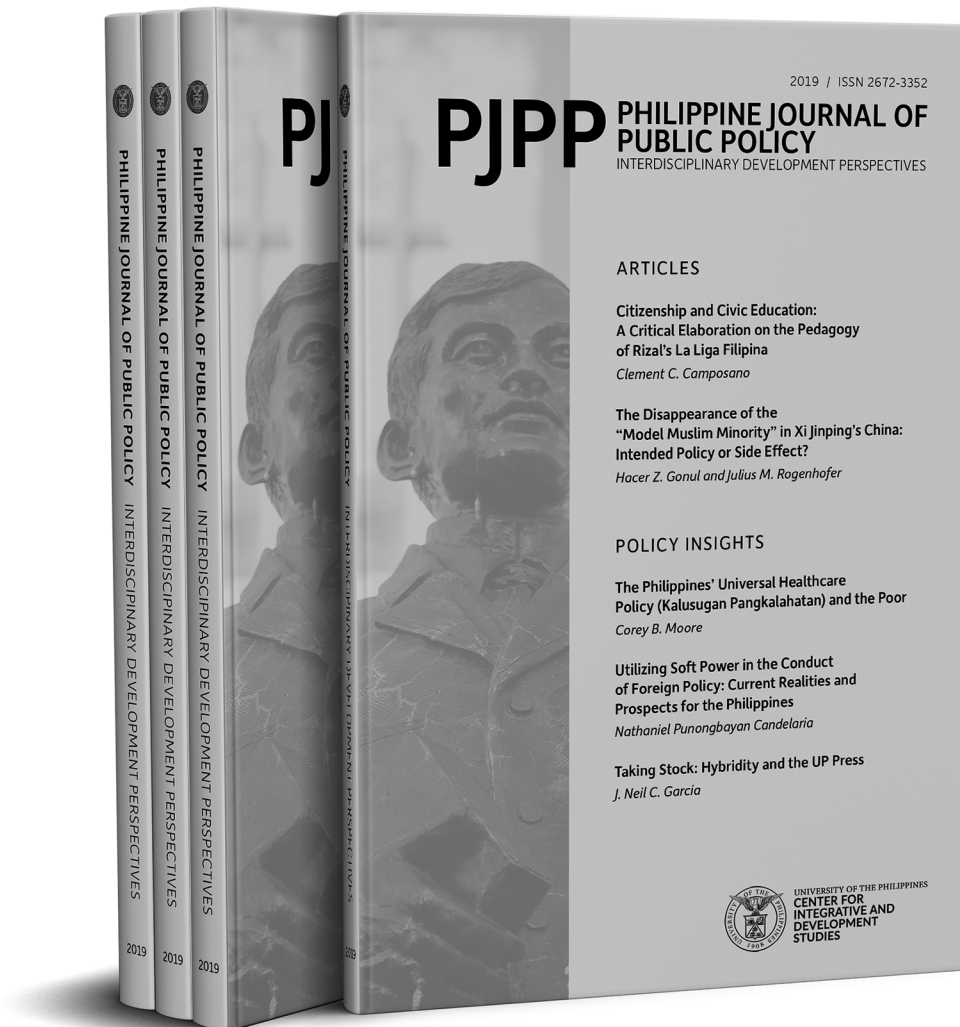
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