

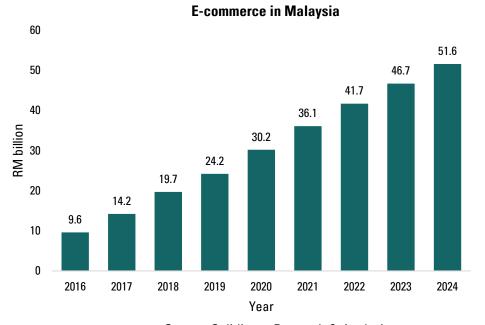
Disclaimer: This data intelligence overview is based on known opensource data. Any inquiries please reach out to editor@malaysiaindicator.com

### **The Turning Point**

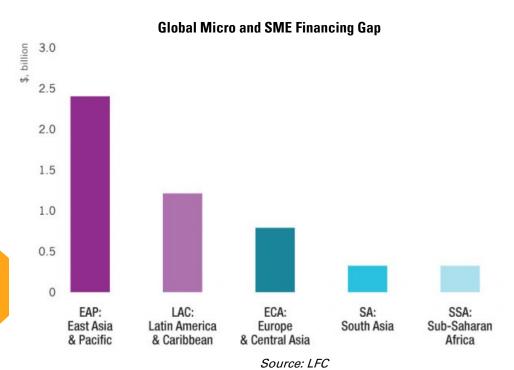
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The COVID-19 pandemic has made a tremendous impact all across the globe. This is particularly true in the shift of consumer behaviour during the pandemic.

As various pandemic-related business restrictions that prevented inperson activities crept across the world's regions, businesses turned to pandemic-proof e-commerce sales channels for basic survival.



Source: Solidiance Research & Analysis



Despite the growing demand for e-commerce due to the surge of informal workers, there is still a gap between global financing institutions and SMEs, stemming from the Global Financial Crisis in 2008.

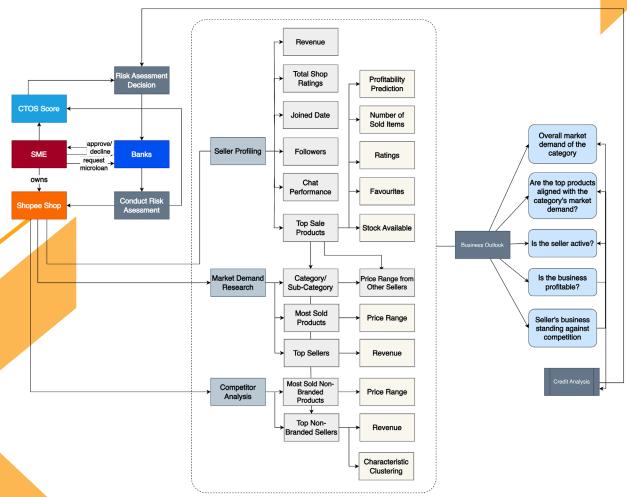


### **Coveted Approach**

Following the crisis, large banks started to avoid lending to SMEs by introducing stricter requirements to receive funds to de-risk their balance sheets, due to the high risk associated with the micro and small enterprises led by asymmetric information.

To tackle this challenge, financial institutions should now redirect its credit assessment methods by utilizing Big Data Analytics.

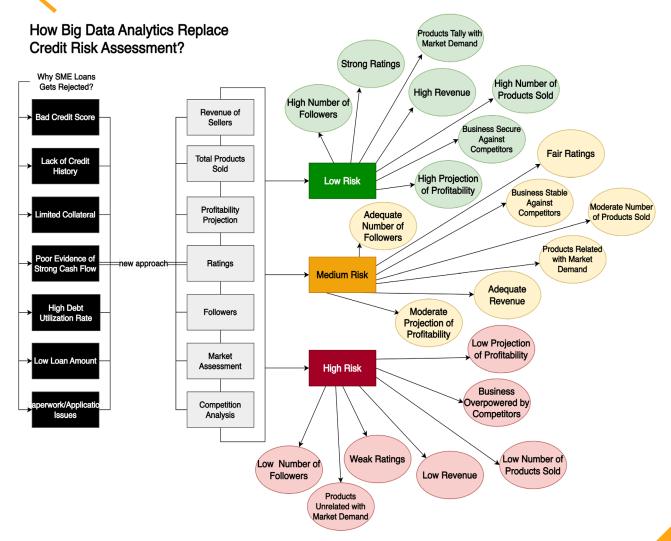
### **Risk Assessment with Big Data Analytics**



Through Big Data, information on sellers' performance could be gathered, which financial institutions could analyse credit risks prior to approval, alleviate challenges led by asymmetric information and hence reduce the risk that major banks face. With that, major banks will be able to capture this market gap, generating extra revenue.

## **Gauging Performance**

Since there is a vast amount of data from e-commerce platforms, financial institutions might face trouble in getting insights from this massive amount of data and hence assess the risk associated. To simplify the process, **sellers' sales performance** as well as the **condition of the market** where the selected sellers play, should be used as the main parameters for the risk assessments.



Generally speaking, internal factors that will be taken into account are the total number of goods sold, the average ratings, the number of followers and the revenue generated by the sellers; while the external parameters that will be considered are the market demand as well as the competition intensity in a specific market.

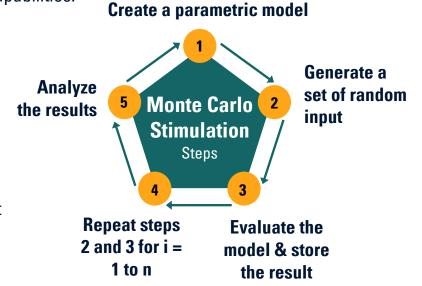


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### **Monte Carlo Stimulation**

To project the profitability and hence predict sellers' capability in generating revenue, Monte Carlo Stimulation has been executed in this analysis, leveraging the Big Data capabilities.

Monte Carlo simulation is a method for iteratively evaluating a deterministic model using sets of random numbers as inputs. For this report, the main objective of the simulation is to determine the range of the profit that a seller could generate, under a certain probability.



As the objective of this stimulation was to predict the sales and hence the revenue of a seller, the parameters that have been used to generate the stimulation are price, item ratings, total ratings (sum of ratings), source of origin (local/international) and brand (branded/ not branded) as these are the factors that consumers are likely to consider before purchasing something from a seller.

Price Total Brand Ratings Origin

Based on the distribution of each parameter, the probability for a product to be sold under different conditions could be determined

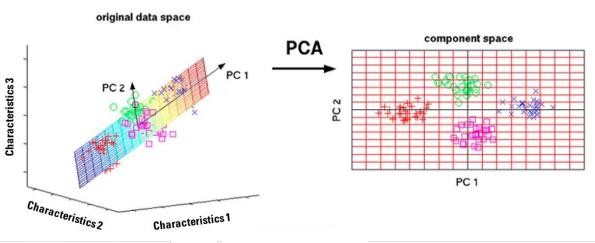
Having the probability for a product to be sold, random inputs could then be assigned to each trial, and stimulate the total sales that could potentially be generated for 1000 trials per stimulation for 200 stimulations.

# Characteristics Clustering



In addition to sellers' profitability, Big Data Analytics also allow financial institutions to study the market that their target clients play in, as well as clients' position compared to their direct competitors that have similar characteristics.

### **Example of PCA**

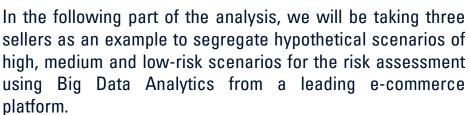


To achieve that, **Principle Component Analysis (PCA)**, as well as **K-mean clustering**, will be utilized. Briefly speaking, PCA is a dimensionality-reduction method that is used to reduce the dimensionality of large datasets while minimising the loss of information.

For this report, the dimensions that will be considered are **sellers' pricing strategy, revenue, origin and product variance** as these are also the factors that consumers might consider before they purchase the product. Based on that, sellers will be plotted in the two-dimensional graph using the PCA techniques, followed by clustering, where K-mean clustering is the methodology that has been used in this case.

With that, sellers will be segregated into clusters, in which clients' direct competitors (similar sellers) could also be determined, facilitating the risk assessment in terms of identifying clients' position in the market.



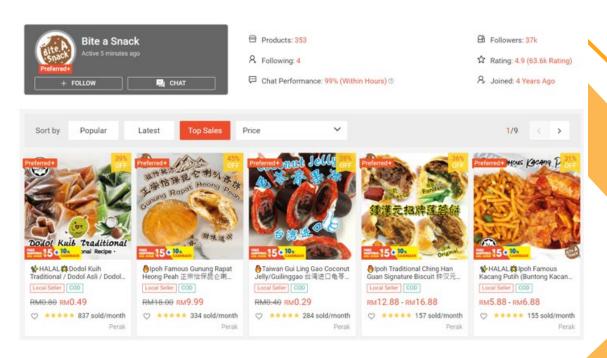




# Small Stake Sellers

Based on the above indicators, Bite a Snack, a local snack seller, has been selected as one of the sellers for this study.

As shown, Bite a Snack has a strong support of followers. Besides, the experience on the e-commerce platform since four years ago has also helped the seller to gain over 60 thousand ratings with an average of 4.9 stars.



Moreover, as most of the products listed by the sellers are consistently high, Bite a Snack has been put under the low-risk spectrum in this study.

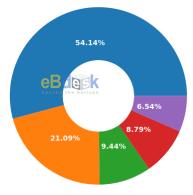


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### **Festive Spike**

Through Big Data Analytics, we can then monitor not only their leading products but also evaluate whether their products are profitable and generating enough revenue. As shown, Dodol is the most sold products for Bite a Snack, followed by some Chinese traditional snacks.

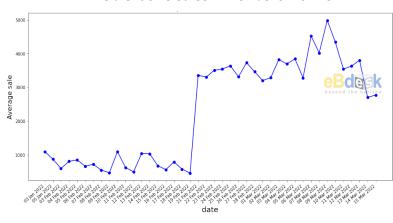
#### Bite a Snack's Top 5 Most Sold Products



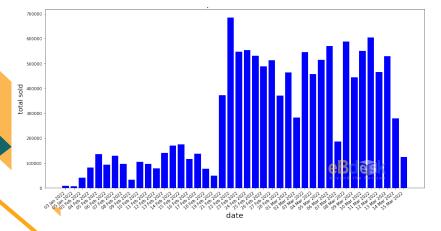
HALAL Dodol Kuih Traditional / Dodol Asli / Dodol Durian / Dodol Pandan (PER PC, SEBIJI)
Taiwan Gui Ling Gao Coconut Jelly/Guilinggao 台湾进口龟苓膏果冻 15g
Ipoh Famous Gunung Rapat Heong Peah 正宗恰保昆仑喇叭香饼
Ipoh Traditional Ching Han Guan Signature Biscuit 钟汉元招牌莲蓉餅
CNY 新年限定 Ipoh Traditional Homemade Kacang Tumbuk 恰保传统手工页糖

Based on the analysis, it is evident that Bite a Snack is a low-risk seller, with steady revenue garnered.

#### Bite a Snack's Sales in the Past 6 Months



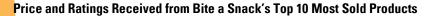
#### Bite a Snack's Revenue in the Past 6 Months

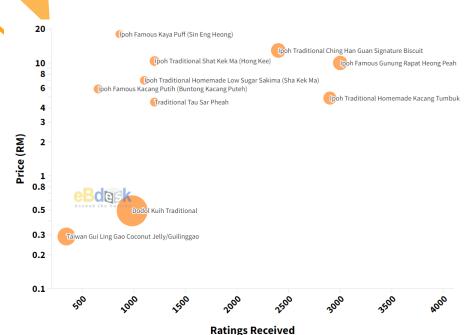


This is especially true during the Chinese New Year, as Bite a Snack sell mostly Chinese traditional snack, which will usually be demanded during the CNY.

# Popularity & Profitability





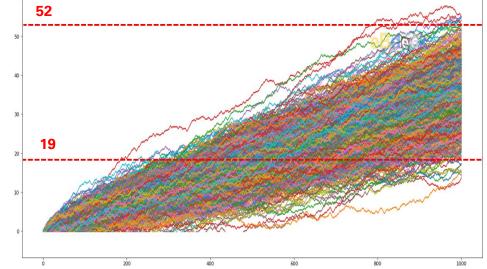


Aside from Dodol, it is also found that the top products from Bite A Snack mostly have high ratings, indicating the sustainability of a steady income stream.

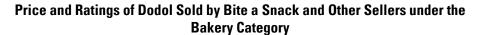
Having the main income stream in mind, it is also crucial to study the profitability of these products.

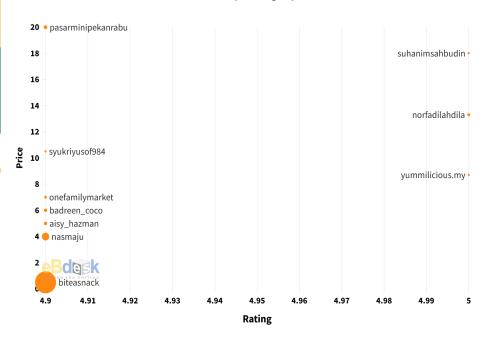
Taking Dodol Kuih
Tradisional as an
example, Bite A
Snack is
projected to have
a 90% chance to
sell 19 to 57 Dodol
for every 1000
page visit, based
on the Monte
Carlo Simulation
that has been
executed.

Bite a Snack's Prediction Analysis on its Top Product using Monte Carlo Simulation



### **Leading Prospect**





When comparing top sellers listing Dodol in a prominent ecommerce platform, it is found that most of the other sellers sold significantly lesser Dodols as compared to Bite a Snack, signifying its strong position in the Dodol market.

#### Top 10 Most Sold Products under the Bakery Category

To determine the intensity of market competition, it is also crucial to see what is sold in the Bakery market, i.e., the market that Dodol has been listed, in general.

蛋黄酥雪媚娘麻薯面包月饼传统糕点心散装紫薯红豆早餐送礼网红零食品小吃 EggYolk Pastry with Mochi Mooncake Festival Red Bean and KOTAK 10 inch Kek Tapak Kuda, Kek Roll, Kek Lapis, Kotak Kuih, Brownies, Bakery, Buttercup, Acuan, Loyang, Cake box, Nutella 3kg | Shopee Malays KOTAK Putih Kek Tapak Kuda / Kek Roll / Kek Brownies / Kek Batik | Shopee Malaysia SOON SENG HEANG Penang Traditional Tau Sar Piah Biscuit Daily Bake Preservative Free (5pcs) 150g± 顺胜香饼铺槟城传统豆沙饼 (5粒装) | Sh 💢 HOT SALES KEK LAPIS FISKA (SMALL) 💢 MIN ORDER : 3 BIJI 🎚 READY STOCK 🞚 | Shopee Malaysia 18g x 24pcs Apollo Layer Cake Assorted Flavor [OmyFood] | Shopee Malaysia SHIOK 4/6/8 inch Portable Transparent Cake Box With White Base For Cake/Pastry/Gift Kotak Gubahan Kek BX1698 | Shopee Malaysia DORAYAKI INTI COKLAT SEDAP & GEBU (sila baca detail produk sebelum order) | Shopee Malaysia KakZL HOMEMADE KEK LAPIS SARAWAK | Shopee Malaysia  $KOTAK\ 9\ inch\ Kek\ Tapak\ Kuda, Kek\ Roll, Kek\ Lapis, Kotak\ Kuih, Brownies, Bakery, Buttercup, Acuan, Loyang, Cake\ box,\ Nutella\ 3kg\ |\ Shopee\ Malaysia and Malaysia$ 10,000 20,000 30,000 40,000 50,000 60.000 90.000 100.000 110.000 120.000 130.000 70,000 80.000 **Total Sold Items** 

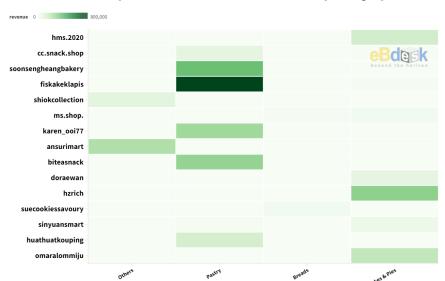
As shown in the analytics, the bakery market is mostly saturated with mochi mooncakes, brownies and Sarawak's layer cake.

### **Concentrated Focus**



To avoid being clouded with reputable brands, it is instrumental to analyse the category with similar sellers to Bite a Snack to measure the competition among small sellers.

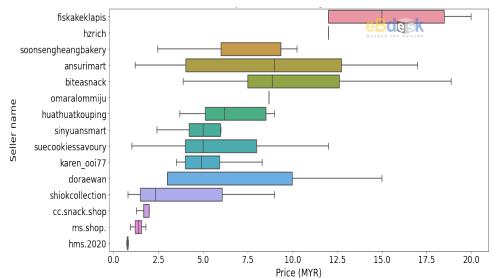
#### Revenue of Top 15 Small Sellers under the Bakery Category



As data depicted, the small sellers are much more concentrated in the Pastry subcategory as shown in the analytics where the subcategory generated the most revenue.

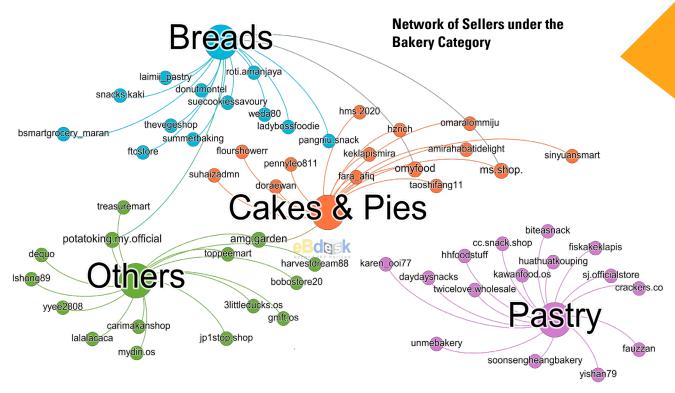
### Price Range of Products Sold by Top 15 Small Sellers under the Bakery Category

It is also worth noting that Bite a Snack's price range of its products are within the same price range as some of the top sellers.

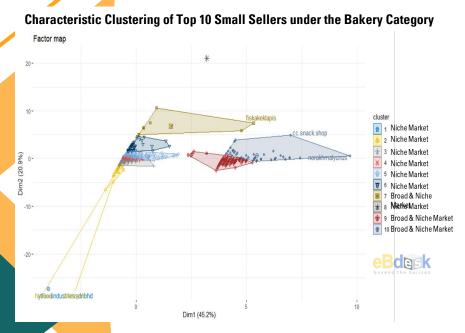




### **Transcenders**



By studying the marketing strategy implemented by the market players, it is found that most of the sellers were playing in the niche market and focused only on one subcategory, including Bite a Snack, who's one of the top players in the subindustry. Knowing that most of the sellers were playing in a relatively niche market,

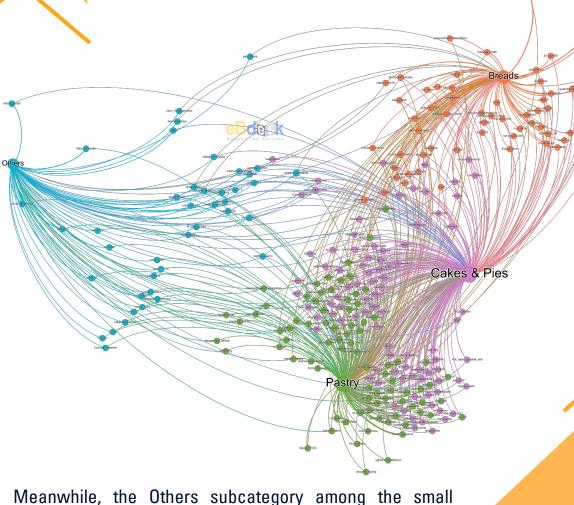


it is also worth studying the characteristics of each seller and the cluster they belongs to. By conducting PCA and K-mean clustering as mentioned previously, it is found that sellers with the most sold items are mainly with a broader market, signaling the unsustainability of the niche market in the long run.

### **Amplified Targets**

Although a broader market will generate a higher revenue for sellers, the cakes and pastry subcategory is highly concentrated even amongst small sellers, thus, indicating that a niche market on these subcategories will still have potential with a respectable amount of attention.

#### **Network of Small Sellers under the Bakery Category**



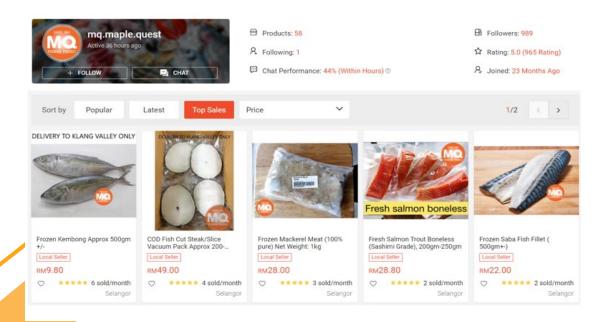
Meanwhile, the Others subcategory among the small sellers is slightly less favourable seeing that the cluster has lesser nodes.



### **Moderate Risk Seller**

In addition to Bite a Snack, Maple Quest, who's a frozen seafood seller, has also been selected.

Unlike Bite a Snack, Maple Quest is categorized as a seller with medium risk for this example, as the shop has a slightly lesser number of followers (989 followers) and only joined 23 months ago.

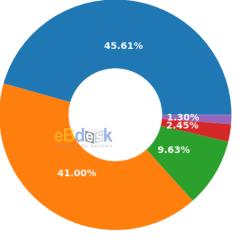


Despite the lower response rate and number of sold items each month, the seller still managed to keep a 5 star rating for the shop. Hence, putting the seller in the medium risk range.

As shown, MQ Seafood Supply's most prominent products sold on the e-commerce platform are mostly fresh or frozen salmon and *kembong* fish.



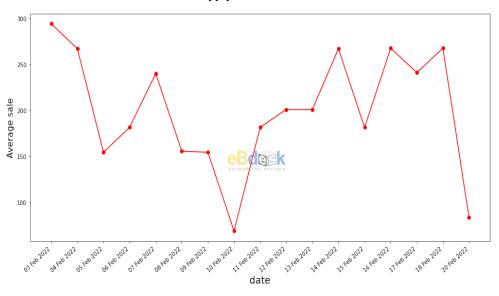
#### MQ Seafood Supply's Top 5 Most Sold Products





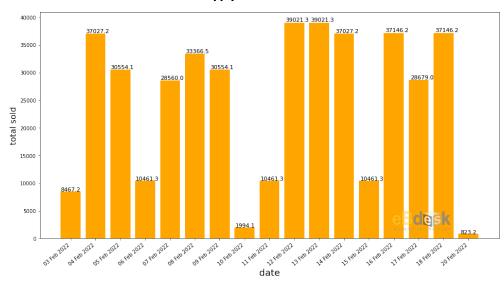


MQ Seafood Supply's Sales in the Past 6 Months



Since products from MQ Seafood Supply is more concentrated on salmon and the revenue is not stable, the shop should be categorized as medium risk since they still have a strong number of followers and ratings. Thus, this proves the potential of the business based on the current market demand.

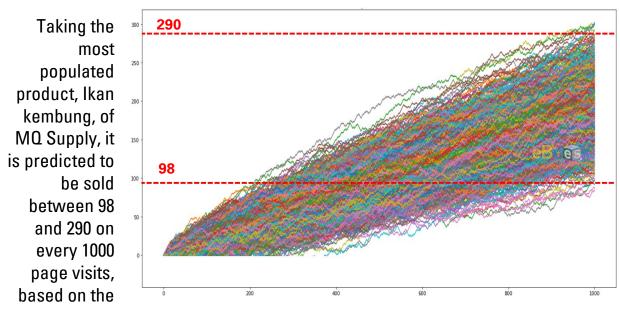
MQ Seafood Supply's Revenue in the Past 6 Months



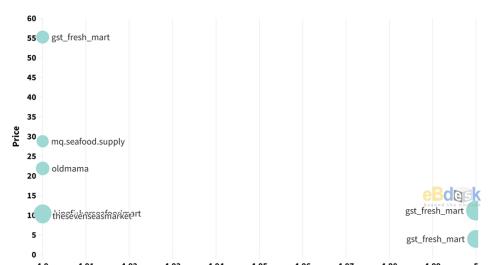
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### **Fair Performance**

MQ Seafood Supply's Prediction Analysis on its Top Product using Monte Carlo Simulation



Monte Carlo Stimulation that has been conducted.



Rating

Price and Ratings of Frozen Kembong Sold by MQ Seafood Supply and Other Sellers

under the Fresh & Frozen Food Category

Zooming into frozen kembung fish, the sales was found to be relatively well. However, it is noted that one of its competitors, gst fresh mart has several listings on the same product and was priced higher with better ratings.

### **Massive Supply**

#### Top keywords of Product Listing under the Fresh & Frozen Food Category



Looking at the products listed under fresh & frozen, it is found that the market is diverse with various products. While fish is one of the prominent goods, pork and chicken seem to dominate the listings under the fresh & frozen category. Furthermore, halal food as well as cheese were also found to be prominent among all.

#### Top 10 Most Sold Products under the Fresh & Frozen Food Category

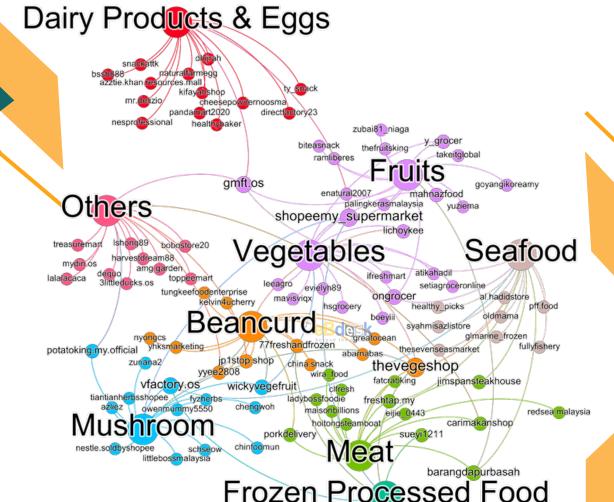
Surprisingly, by looking at the sales of products in the fresh & frozen category, it is found that kurma is the most populated product, followed by cheese powder.



**Total Sold Items** 

### **Obliterated**

Network of Sellers under the Fresh & Frozen Food Category



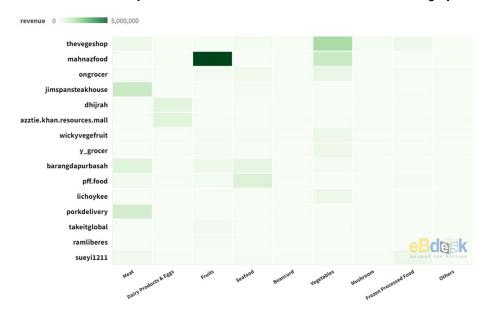
Unfortunately, the analytics revealed that MQ Seafood Supply did not appear among the top sellers of the Fresh & Frozen category as the shop was overshadowed by other sellers in the network. It was also noted that most sellers in the category sell interrelated products. Nonetheless, some of MQ Seafood Supply's competitors which appeared in the previous analytics such as Old Mama and The Seven Seas Market appeared in the network of top sellers.

mydiy883 taoshifang11

csfoodstuff

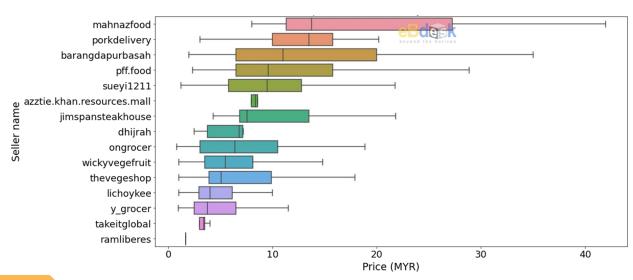
### Dominant Force

#### Revenue of Top 15 Small Sellers under the Fresh & Frozen Food Category



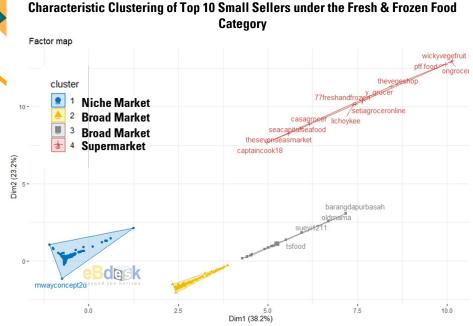
However, when branded and established brands have been excluded, the Meat and Seafood subcategories are more prevalent, thus, showing that this market is much more saturated among small sellers.

#### Price Range of Products Sold by Top 15 Small Sellers under the Fresh & Frozen Category



In terms of the price range of sellers carrying the most sold items, most of the sellers listed their products below RM20 which is lesser than MQ Seafood Supply's Frozen Kembung fish.

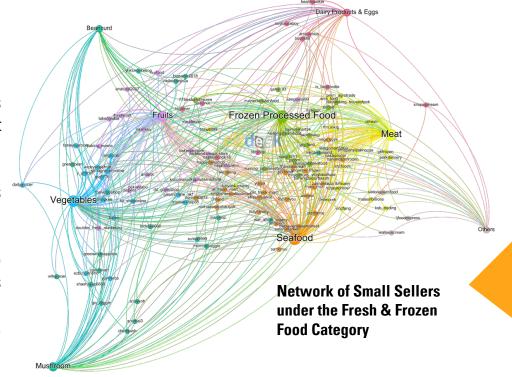




From the characteristic clustering analysis, it is clear that there are more supermarkets offering products in the category. However, the niche markets has been gaining more attention in the ecommerce platform.

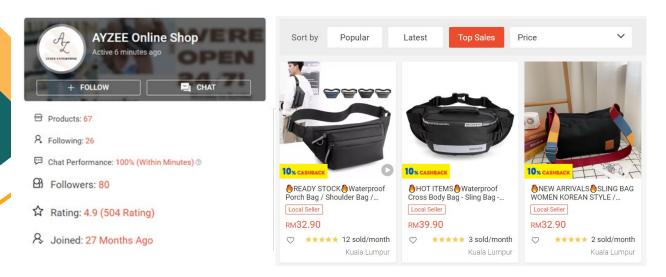
Hence, this might also indicate the MQ Seafood Supply might be competing with bigger supermarkets, causing the shop to be diluted in the previous network of top sellers.

As lots of the players were playing in the board market, it is unsurprised that markets were interrelated with each others. As depicted by the data, seafood sellers seem to sell also meat as well as frozen processed food.

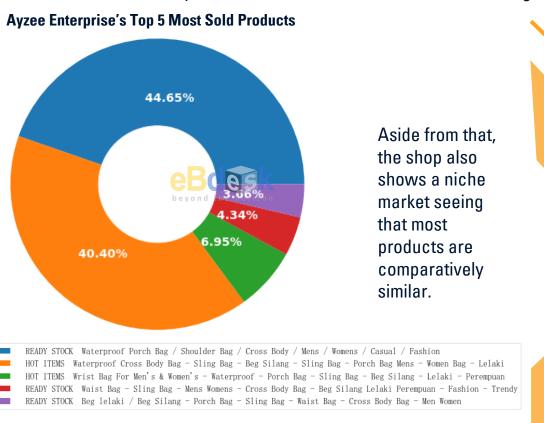




### High Risk Seller

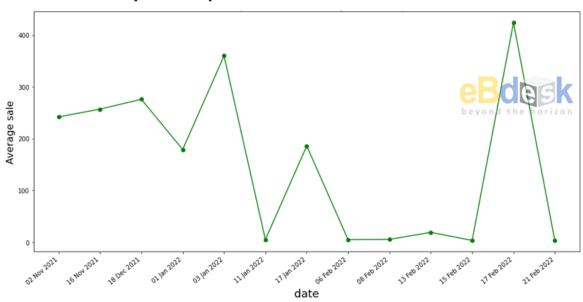


Although Ayzee Online Shop is slightly more experienced than Maple Quest by a few months, the seller only has less than 100 followers with lesser ratings.



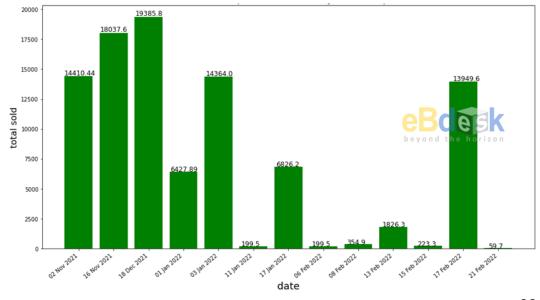
### **Inflating Gap**

### Ayzee Enterprise's Sales in the Past 6 Months



In contrast to Bite A Snack and MQ Seafood Supply, Ayzee Enterprise has gaps in its revenue and the number of sold items is also unstable as compared to the previous two shops. Hence, this indicates that Ayzee Enterprise can be categorized as a high-risk loan applicant especially since the number of followers and ratings is also low.

#### Ayzee Enterprise's Revenue in the Past 6 Months



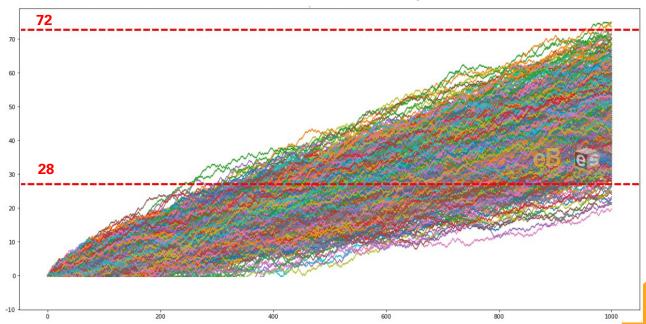
## **Imbalanced Exposure**

The analysis of Ayzee Enterprise's top 10 products also shows that only two products have a high number of sold items while other products did not gain the attention of the consumers aside from most of the listings being redundant, highlighting the niche market.



\*Size of the bubble represents the number of sold items

#### Ayzee Enterprise's Prediction Analysis on its Top Product using Monte Carlo Simulation



By stimulating the sales of Ayzee Enterprise's "Waterproof Porch Bag" (their top) sold product), it is found that there is a 90% chance of the product being sold between 28 to 72 times for every 1000 page visits.

### Downplayed



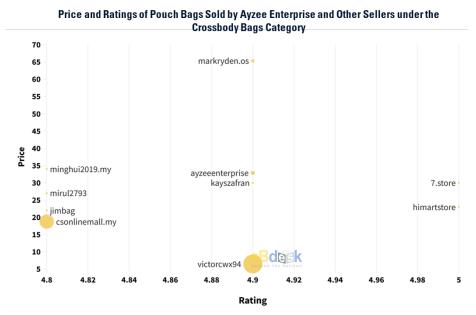
#### Top 10 Most Sold Products under the Crossbody Bags Category

0	5000	10,000	15,000	20,000	25,000	30,000	35,000	40,000
Sling Bag	g Men'Sling Bag Wo <b>6600</b>	omen's Sling Bag l	Beg Lelaki Should	er Bag Crossbody	3ag (SL-016)   Shop	oee Mataysia		
Cl' D	6900		2 1 - l - l - l - l - l - l - l - l	D C	0(CL 016)   Ch	Malauria		
G) Good	Quality WATERPRO	OF PU/Nylon Gre	gory Pancoat FR2	Duckdude Bape Y	ımaha Honda Stor	ne Island Sling Ba	g Crossbody   Sho	pee Malay
	7900		,		,			
Golden V	Volf Gusion Anti-Th		ody Travel Light V	Weight Sling Bag   S	hopee Malaysia			
7 3030 7 6	840		Mell's Silouidel D	eg Letaki Olit Wals	. Dags stillg bag ill	en men bag men v	tanvas deg   Snop	ee Malaysi
DCDE6 D	andaShop Men che		Mon's Shoulder B	log Lolaki Girl Wais	Page cling hag m	on mon hag mon	canyas hog   Shon	oo Malaysi
[ READY	STOCK VANSX S		ly Bag Men Wome	n Chest Bags Shou	lder Bag Messeng	er Bag Beg Lelaki	Perempuan   Shop	pee Malays
		9500						
CANEL&C	CO Chest Bag Men	Women Canvas Ca	ausal Travel Shoul	lder Bag Motor Slir	g Bag Man Beg lel	aki   Beg Tangan	Pouch Bag   Shop	ee Malays
	,	10,500	9		,	, ,	0,1	,
Arctic Hu	ınter i-Easy Waist B		vel Sling Shoulde	r Bag Stylish Cross	oody Bag Outdoor	Sport Cycling Ru	nning   Shopee Ma	alavsia
Ready	Stock Men's Cross	11,800	er stillig bag Chest	Pouch Casaul Bag	s beg Leiaki Men r	asnion   Snopee i	nataysia	
<b>©</b> Doody	Stack Mania Crass	12,600	•	Dough Coccul Boo	s Dog Loloki Mon F	achian   Chanca N	Malaysia	
12G2 Al S	Sahhia USB Chargii			ag Sling   Shopee M	alaysia			
						Beyond the h	37,90	0

By comparing the sales performance with other sellers playing in the crossbody bag category, it is found that the number of bags that could potentially be

sold by Ayzee was relatively low, especially when looking at top-sold products. Aside from that, the analysis also shows that the market is heavily overpowered by Panda Shop, which could be the prominent competitor that Ayzee is likely to face.

Nevertheless, as the pouch bag market is guite slim and niche, it is found that aside from the dominant players, @victorcwx94 and CS Online Mall Malaysia, most of the sellers were having relatively low number of goods sold.



<sup>\*</sup>Size of the bubble represents the number of sold items

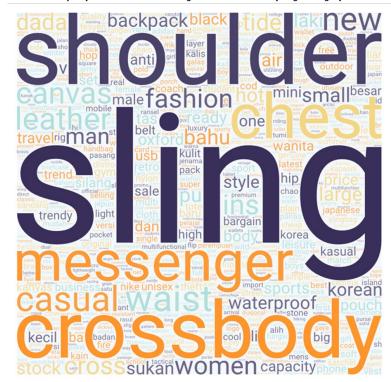
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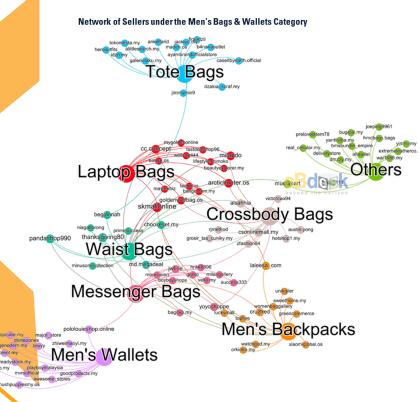
### Commensurable

Top Keywords of Product Listing under the Crossbody Bags Category

To measure sellers' capabilities in profit generation, it is also crucial to study the demand of the market that the sellers play in.

Looking at the products
listed under the
crossbody bag category,
"casual", "leather",
"Korean" and
"waterproof" are found to
be the most prominent
terms, indicating the
trend of the market.



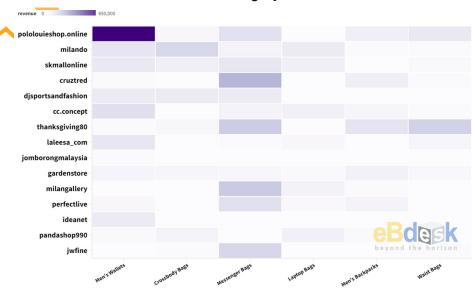


Apart from that, the network analysis on the top sellers under the Men's Bags & Wallets category shows that crossbody bags are among the popular items in the category. Hence, Ayzee Enterprise's focus on crossbody bags is still aligned with the market demand for the category.

### Subdued

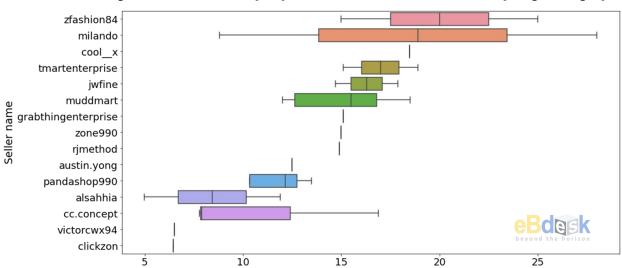


### Revenue of Top 15 Small Sellers under the Men's Bags & Wallets Category



When the Arctic Hunter shop and other established brands were excluded, it is shown that @pololouieshop.onli ne gained the highest revenue. However, this mainly came from the Men's Wallet subcategory.

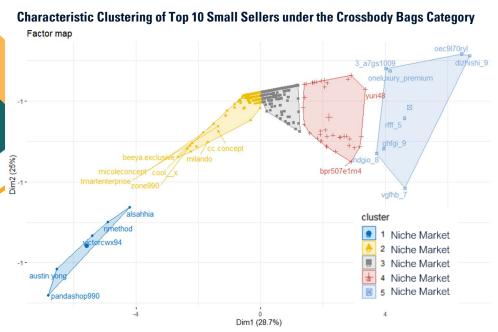
### Price Range of Products Sold by Top 15 Small Sellers under Crossbody Bags Category



Comparing the price range of crossbody bags from other sellers, it can be seen that most products from @pandashop990 are priced below RM10, emerging as top players. Crossbody bags from Ayzee Enterprise on the other hand are priced at RM30 and above.

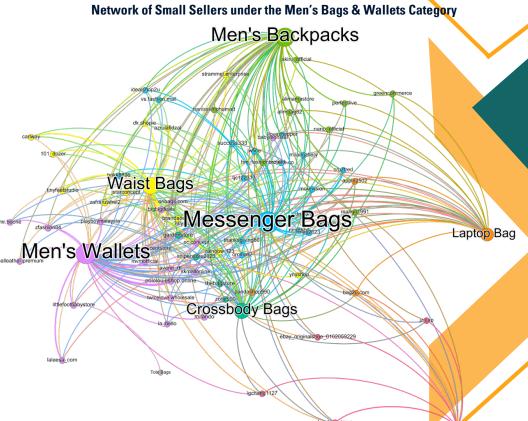


### Indifference



As shown in the characteristic clustering, most products under the subcategory are mainly from the niche market since most sellers are focusing on one category or providing similar products.

The network of non-branded sellers in the Men's Bags & Wallets Waist Bags category shows that messenger and men's Men's Wallets wallets are the most saturated market seeing that there are more nodes in the cluster.





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# **Key Takes**

- Based on the analysis, it is clear that e-commerce platforms can potentially provide useful insights through Big Data Analytics equipped with advanced analytics that uses the frequently overlooked indicators.
- Adding into the context of the e-commerce indicators, the stakeholders can analyse whether the products from the sellers have potential based on the sellers' performance, competition analysis, profitability projection, and analysing the market demand.
- Nonetheless, the study has also shown that by utilising specific advanced methodology together with the e-commerce analysis, it appears that the risks can be identified and subsequently further cemented the findings.



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