

## **Roles of Mobile Phone in Increasing Productivity of Malaysian Agro-Based Entrepreneurs**

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**Abstract:** Mobile phone and agriculture are two different things that can be integrated in so many ways. As other industries are manipulating the advantages of mobile phone so do the agriculture industry. The main objective of this study is to investigate the various purpose of mobile phone usage among the agro-entrepreneurs while unleashing the contribution of this tool towards agro-based entrepreneurs productivity. Apart from this, this study would like to discover any impacts of mobile phone usage on agro-entrepreneurs productivity. This is a quantitative study where a developed instrument was used. A total of 365 respondents across Peninsular Malaysia were surveyed to gain the required data. Majority of the agro-based entrepreneurs use mobile phone for seeking information related to their business activities while mobile phone has contributed towards their productivity in term of getting information needed and widening their networkings. Further analysis using independent t-test has confirmed that there was no significant difference in productivity for those who use mobile phone frequently and seldomly. It is recommended that responsible agencies such as Department of Agriculture and Malaysia and Communication and Multimedia Commission should play their role in promoting the advantages that mobile phone has in increasing agricultural productivity. Mobile web and phone line specifically for agriculture information should be created in doubling the function of mobile phone in agriculture.

**Key words:** Mobile phone, agro-based entrepreneurs, agriculture information, agro-business productivity, networking, Malaysia

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### **INTRODUCTION**

Technological communication is developing coinciding with other ICT tools. In this modern day, the evolution of mobile phone is tremendous. Almost every week, we are introduced to the new models and designs of mobile phone. International mobile phone brands such as Nokia, Samsung, HTC and Sony are dominating the market. The affordable price of this tool is among the main cause why majority of Malaysians possess it. In the current market, mobile phone can be bought as cheap as RM50 (equivalent to USD 16) while the prepaid and airtime can be bought as cheap as RM5 (USD 1.6).

The telecommunication industry in Malaysia particularly the secular communication industry has significantly developed. Currently, companies such as Celcom, Maxis and Digi are among the big players in telecommunication industry in Malaysia. Up to date, there were >29 million mobile prepaid subscribers. Such big number has demonstrated the evolution of the way

Malaysian communicates now-a-days. Previously, majority of Malaysian were communicating through fixed telephone line and public phone but not any more on this day. Superior technology of mobile phone has resulted people to ignore the traditional functions of telephone and public phone.

Effort of the government to reduce the knowledge gap has impinged the way people perceived the usability of the technologies. Albeit geographical location, socio-economic status, gender and profession, majority of people are having their mobile phone in their handbag or pocket.

Equal to other industries, agriculture is manipulating the advantages of mobile phone in its development. Albeit telecommunication and agriculture are two different things, it can be united in so many ways. Without doubt, communication is crucial for the agro-based entrepreneurs. It is an important tool to impinge their economic activities. Such tool allows effective and rapid communication for getting the best prices, widening

their markets and networks and information and knowledge sharing (Mittal and Tripathi, 2009). Furthermore, the advantages of mobile phone have aided farmers widen their market, lower the cost and double their profits (Amaya and Alwang, 2011) while according to Bolerinwa and Oyeyinka (2011), mobile phone has the ability to enhance the socio-economic aspects of a community thus prove that it has the power to strengthen the agriculture sector. A study done by Martin and Abbott (2011) emphasized that mobile phone usage among the agriculture community has the ability to increase their productivity while widen their market participation.

In spite of these, mobile phone also is a distinctive media that has the ability to strengthen the social ties in the farming community (Kim *et al.*, 2007). Salleh has stressed that the three main purposes why farmers used mobile phone were sharing information among agro-entrepreneurs, seeking advices on agriculture and seeking information on post harvest.

This study attempts to identify the purposes of using mobile phone among the agro-entrepreneurs while unleashing the contribution of such tool towards agro-based entrepreneurs productivity. Apart from this, this study would like to discover any impacts on productivity in term of frequency of mobile phone usage among the agro-based entrepreneurs.

## MATERIALS AND METHODS

This is a quantitative study where a developed instrument was employed to gain the data needed. The population of this study was 3580 and based on the study done by Krejcie and Morgan (1970) if the population is between 3500-3999 the appropriate number of sample is 346. This study has chosen a total of 365 respondents across the countries and to have a bigger sample size will not post any problem to the study as according to Najib (1999), bigger sample size will intensify the reliability and validate the study. Researchers and enumerators went to the respondent's house, farm or factories to conduct the data collection. To fulfill the objectives determined, suitable and relevant analyses were employed.

## RESULTS AND DISCUSSION

**The respondents' profile:** Based on the findings, it can be seen there was still less female involvement in agriculture business. Gidarakou (1997) has unleashed the possible reason for this by saying that female have less interest in the agriculture business due to their commitment to their family and the physical demand of this activity. Only a

total of 32.6% of the respondents surveyed were youth (<40 years old) which denotes that the agriculture industry is still lacking in term of support from the younger generation.

Man (2008) has claimed that younger generation in Malaysia has less interest in agriculture due to their negative perception while D'Silva *et al.* (2010) have stressed on attitude as the key for positive acceptance towards agriculture. Only 5.8% of them possessed university level of education (Degree/Master/PhD) while only 0.5% of them possess degree in agriculture. Less involvement in agriculture among the university graduates is resulted by low income gained from agriculture business (Zekeri and Warren, 2011; Akpan, 2010). Majority of the respondents were from the East coast zone of Malaysia (Pahang, Terengganu and Kelantan) and the minority of the respondents were from the Northern zone of Malaysia (Pulau Pinang, Perlis and Kedah) (Table 1).

**Respondents business characteristics:** Majority of the respondents were running the food processing business while a number of them were also involve in farming and animal rearing. Even some of them were identified to conduct more than one agro-business activities. Majority of the respondents can be considered as experienced agriculture entrepreneurs as the depicted mean score for period of involvement was 10.9 years. A huge difference on the mean score of money invested and money gained from the business, it can be concluded that the

Table 1: Profile of respondents (n = 365)

Profile	Frequency	Percentage	Mean
<b>Gender</b>			
Male	251	68.8	
Female	114	31.2	
<b>Age (years)</b>			44.6
≤40*	119	32.6	
41-49	131	35.9	
≥50	115	31.5	
<b>Education level</b>			
Primary school	102	27.9	
SPM/SPMV	169	46.3	
STPM/Matriculation	37	10.1	
Diploma	36	9.9	
Degree/Master/PhD	21	5.8	
<b>Education level in agriculture</b>			
No formal education in agriculture	325	89.0	
Certificate in agriculture	29	7.9	
Diploma in agriculture	9	2.5	
Degree in agriculture	2	0.5	
<b>Zone</b>			
East coast	143	39.2	
Central	87	23.8	
Southern	82	22.5	
Northern	53	14.5	

\*In Malaysia, based on the definition of Ministry of Youth and Sport, youth are considered as those with age range between 15-40 years old

respondents studied have profited much from the agriculture business conducted. Results gained revealed that majority of respondents (90.1%) used their mobile phone for the purpose of agriculture information sharing among their business colleagues, this is followed by those who used their mobile phone for the purpose of seeking advice on agriculture (84.1%). Apart from this more than four fifth of respondents (83.4%) used their mobile phone to seek post harvest information and this is pertinent with a study done by Masuki *et al.* (2008) where he claimed that demand on post harvest information is one of the main purposes why farmers utilize mobile phone.

Result gained concluded that a total of 69.0% of them used mobile phone for seeking information on ICT. Mobile phone can be considered as an important tool in agriculture since 10 from 11 of the purposes listed recorded percentage >78%. This demonstrates the prominence of mobile phone and this is in tandem with studies done by Alampay (2006) and Mittal and Tripathi (2009).

**Potential mobile phone contribution in increasing agro-based productivity:** To investigate the contribution of mobile phone towards agro-based productivity, a total of 11 potential contributions of mobile phone were included in the questionnaire. The instrument was based on the 5-Likert scale ranging from 0 (no contribution) to 4 (very high). The overall mean score recorded of 2.50 has denoted that mobile phone has moderately contributed to the agro-based entrepreneurs. Data gained is in tandem with studies done by Ilahiane (2007) and Tripathi (2009). Based on the data depicted, it can be seen that majority of the respondents utilize the mobile phone for information seeking purposes. This is concretely based on the highest mean score recorded by four statements namely; getting information every time needed ( $M = 2.78$ ); enhancing networking in getting technical information of agriculture ( $M = 2.68$ ); getting updated information ( $M = 2.51$ ) and enhancing ability in getting marketing information ( $M = 2.49$ ). Data depicted that albeit various superiority functions offered by the mobile phone, yet the conventional function of mobile phone still become the main reason why agro-based entrepreneurs in Malaysia utilize mobile phone in their business activity.

Are those who use mobile phone frequently and seldomly different in their agriculture business productivity? Further analysis employed have revealed that there was no significant difference on mobile phone contribution towards agro-based productivity between those who used it frequently ( $M = 2.55$ ,  $SD = 0.962$ ) and

those who used it seldomly ( $M = 2.36$ ,  $SD = 0.992$ ;  $t(365) = -1.640$ ,  $p = 0.102$ ). Result gained has depicted the possibility that even low level of mobile phone usage among the agro-based entrepreneurs will result in great impacts on their productivity (Table 1-5).

To gain information has become the main reason why agro-based entrepreneurs used mobile phone in their business activities.

Mobile phone has assisted them in deriving updated agriculture information. Independent t-test done proved that albeit some agro-based entrepreneurs used mobile phone seldomly, they equally believed with those who used mobile phone frequently on what mobile phone can contribute to their agro-business.

Hence, responsible agencies such as Department of Agriculture and Malaysia and Communication and Multimedia Commission should play their role in promoting the advantages that mobile phone has in increasing agricultural productivity. Mobile web and

Table 2: Business characteristics of respondents (n = 365)

Variables	Frequency	Percentage	Mean
<b>Type of agro-business</b>			
Food processing	149	40.8	
Farming	85	23.3	
Animal rearing	73	20.0	
Fisheries	25	6.8	
>1 agro-based project	15	4.1	
Plantation	9	2.5	
Non-food processing	9	2.5	
<b>Period of involvement</b>			10.9
≤ 5 years	67	18.4	
6-10 years	153	41.9	
≥ 11 years	145	39.7	
<b>Amount of starting investment [value in Ringgit Malaysia (RM)]</b>			18,459.74
≤ 4,000	113	31.0	
4,001-11,000	120	32.9	
≥ 11,001	132	36.2	
<b>Amount of income gained per year [value in Ringgit Malaysia (RM)]</b>			125,904.93
≤ 28,000	113	31.0	
28,001-60,000	130	35.6	
≥ 60,001	122	33.4	

Table 3: Purposes of using mobile phone (n = 365)

Purposes	Percentage (using it for the purposes listed)
Agriculture information sharing among agro-based entrepreneurs	90.1
Seeking advices on agriculture	84.1
Seeking for post harvest information	83.4
Seeking agriculture land information	82.2
Seeking loan services information	81.9
Seeking for market information	81.9
Seeking information on productivity process	80.5
Seeking for productivity input information	79.5
Seeking information on disease control	78.4
Seeking information on business opportunity	78.4
Seeking information on ICT	69.0

Table 4: Percentage distribution of perception on mobile phone roles in increasing agro-business productivity (n = 365)

Roles	Percentage					Mean
	0	1	2	3	4	
<b>Overall mean score</b>						2.50
Getting information every time needed	4.1	10.1	22.7	29.9	33.2	2.78
Enhancing networking in getting technical information of agriculture	3.8	10.1	25.8	34.5	25.8	2.68
Getting updated agriculture information	4.4	16.2	29.3	24.4	25.8	2.51
Enhancing ability in getting market information	3.3	13.7	33.7	29.0	20.3	2.49
Promote products to wider markets	6.0	16.2	27.1	24.7	26.0	2.48
Saving time in dealing with related parties	6.3	14.5	30.1	24.7	24.4	2.46
Disseminating new knowledge and technology	5.2	13.7	30.1	31.2	19.7	2.47
Getting skills and knowledge of modern technology	4.9	11.5	37.0	26.3	20.3	2.45
Effective extension channel	5.5	14.8	31.0	26.8	21.9	2.45
Assisting more systematically and efficient in agro-business	5.5	15.9	32.3	25.2	21.1	2.41
Enabling in offering good price for product	7.4	16.7	27.9	31.8	16.2	2.33

Table 5: Comparison on perception on mobile phone contribution between those who frequently and seldomly used mobile phone using independent t-test

Variables	n	Mean±SD	t	p-value
<b>Level of mobile phone usage</b>				
Frequently	270	2.55±0.962	-1.640	0.102
Seldomly	95	2.36±0.992	-	-

phone line specifically for agriculture information should be created in doubling the function of mobile phone in agriculture.

## CONCLUSION

Results gained show that agro-based entrepreneurs used mobile phone for three major purposes which were agriculture information sharing among agro-based entrepreneurs, seeking advices on agriculture and seeking for post harvest information. Results also revealed that Malaysian agro-based entrepreneurs perceived mobile phone can majorly contribute to their agro-business in three aspects which were getting information every time needed, enhancing networking in getting technical information of agriculture and getting updated agriculture information.

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