International Journal of Agricultural Technology 2026 Vol. 22(3):1507-1520
DOI: https://doi.org/10.63369/ijat.2026.22.3.1507-1520
Available online http://www.ijat-aatsea.com
ISSN 2630-0192 (Online)

Determinants influencing the adoption of the windy.com application among large-scale durian farmers' groups in Rayong Province, Thailand

Thonoi, A., Thongkaew, E.*, Suwanmaneepong, S., Kerdsriserm, C. and Mankeb, P.

School of Agricultural Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand.

Thonoi, A., Thongkaew, E., Suwanmaneepong, S., Kerdsriserm, C. and Mankeb, P. (2026). Determinants influencing the adoption of the Windy.com application among large-scale durian farmers' groups in Rayong Province, Thailand. International Journal of Agricultural Technology 22(3):1507-1520.

Abstract The findings found that farmers who participated in training and utilised the Windy.com application, the majority of participants were male, aged between 51 and 60 years, with a bachelor's degree and an average household size of 3–4 members. The farmers possessed 1–15 years' experience in durian cultivation, with farm sizes ranging from 1 to 25 rai. The average durian yield was approximately 1,000–2,000 kilograms per rai, with an average market price of 91–120 Baht per kilogram. Participants demonstrated a high level of knowledge (μ = 81.20) and exhibited a positive attitude towards the Windy.com application (mean = 3.91), with the highest attitude score observed in the content dimension (μ = 4.08). Overall, the adoption of the application was rated as high (μ = 4.09), particularly concerning their intention to use it (μ = 4.23) and perceived usefulness (μ = 4.06). Multiple regression analysis reveals attitude to be the most significant predictor of adoption (β = 0.67, $p < 0.01$), suggesting that improved attitudes among farmers increased their adoption of the application. Conversely, factors such as farming experience and farm size was significantly influenced adoption ($p > 0.05$). The results imply that promoting positive attitudes and providing effective training can significantly enhance farmers' long-term adoption and utilisation of digital applications.

Keywords: Technology adoption, Durian farming, Farmers' attitudes, Windy.com, Rayong

Introduction

The agricultural sector is a key part of Thailand's economy and society, with 8.7 million farmers involved in farming. These farmers make up 37.50% of all households in the country and manage 142.9 million rai, representing 44.50% of the total land area (National Statistical Office of Thailand, 2023). However, Thai farmers continue to face many risks, especially from the climate, like changes in temperature. Therefore, having accurate and up-to-date weather

* **Corresponding Author:** Thongkaew, E.; **Email:** ekkaphon.th@kmitl.ac.th

forecasts is very important for reducing these risks and making agricultural planning more efficient (Boonchai, 2020).

One of Thailand's most important economic crops is durian, accounting for 24.00% of domestic consumption and up to 76.00% of exports, both in fresh fruit and processed products. Although durian brings significant income into the country, Thailand still lacks a comprehensive system for managing durian from research and production to marketing (Department of Internal Trade, Ministry of Commerce, 2024). It also lacks proper weather data that could help farmers plan their production more effectively (Buathong, 2017). Durian needs careful care to produce sufficient, high-quality fruit for sale and consumption. The best temperature for growing durian is between 25–30 ºC, while the air humidity should be around 75.00–85.00% (Thongpanchang, 2003).

Today, digital technology plays a significant role in helping with agricultural management. Weather apps on smartphones, like Windy.com, offer precise and high-resolution forecasts using satellite data and real-time updates. These apps provide a wide range of information, such as temperature, air pressure, air quality, and storm tracking through weather radar. This makes it easier for users to understand the data in an engaging 3D format (Agricultural Technology and Innovation Center, Bank for Agriculture and Agricultural Cooperatives, 2023), especially when managing durian orchards, which require careful control of the climate.

Consequently, encouraging farmers to use Windy.com is very important for improving durian production in Rayong Province. The Innovative Project on Production and Marketing Information Management to Improve the Quality of Durian Production to the Premium Market in Rayong Province provides training and education to farmers, helping them to understand and use the app for better durian garden management. Using Windy.com helps farmers plan their production more accurately, reducing resource use in the orchards, and improving management practices such as fertilisation, spraying, weather forecasting, and irrigation. A group of durian farmers from a large agricultural enterprise with two plots (2 and 3), in neighbouring areas, have started using the app. They also regularly share knowledge and techniques within the group. Additionally, the knowledge and experience gained from using the app have been passed on to others through a training session on the topic "Using Weather Data for Accurate Durian Gardening" as part of the project (Seeda, 2024).

Therefore, the study aimed to investigate the economic and social conditions, knowledge levels, attitudes, acceptance, and factors influencing the adoption of Windy.com by durian farmers in Rayong Province.

Materials and methods

Population

Data were collected from a total population of 80 durian farmers involved in the Innovation Project on Production and Marketing Information Management to Improve the Quality of Durian Production for the Premium Market, who previously used the Windy.com weather application.

Data collection

The information was gathered using the Interview Form as the main tool.

Part 1 consisted of 11 questions to collect basic details on the respondents, such as gender, age, education, family members, experience in durian farming, size of the durian plantation, average yield, price of durian, cost of production, and income from durian farming. Part 2 contained 15 questions designed to assess the farmers' knowledge on the use of the Windy.com application, with one point for each correct answer and zero for incorrect ones, totalling 15 points. Part 3 consisted of attitudes towards the application, with 20 questions divided into four areas: information, content, effectiveness, and usefulness. Part 4 covered application acceptance, with 15 questions focusing on three key factors: perceived ease of use, perceived usefulness, and intention to use. Content validity was checked by three experts and analysed using the Index of Item Objective Congruence (IOC), which equated to 0.95 with a reliability value of 0.86, indicating a high level of consistency in the instrument. This research passed the human research ethics review (project code EC-KMITL_68_122).

Data analysis

Descriptive statistics were used to analyse the demographics, knowledge, attitudes, and opinions of the farmers regarding the acceptance of the application.

It was presented using frequency, percentage, mean, and standard deviation. The knowledge level of the farmers regarding Windy.com was ranked into three categories based on the criteria applied by Bloom (1967): 80–100% (12–15 points) for a high level of knowledge, 60–79% (9–11 points) for a moderate level of knowledge, and 0–59% (0–8 points) for a low level of knowledge. The attitude of the farmers towards the Windy.com application was measured using the interpretation criteria used by Wanjohi and Syokau (2021), with averages of 3.50–5.00 indicating a positive attitude, 2.50–3.49 indicating a neutral attitude, and 1.00–2.49 indicating a negative attitude. The acceptance

level was measured using five Likert scale categories: 4.21–5.00 for very high acceptance, 3.41–4.20 for high acceptance, 2.61–3.40 for medium acceptance, 1.81–2.60 for low acceptance, and 1.00–1.80 for very low acceptance. Multiple regression analysis was also used to predict the factors influencing farmers' acceptance of Windy.com applications, employing the Enter method and considering statistical significance at the $p < 0.05$ level (Mankeb, 2016).

The regression equation model used in the analysis is as follows:

$$Y = a + b_1X_1 + b_2X_2 + ... + b_nX_n$$

where

Y represents the factors affecting the Windy.com application.

X represents the independent variables.

Results

Personal information

Most of the farmers were male (56.30%), with the majority aged between 51 and 60 years (36.30%). Forty per cent (40.00%) had a bachelor's degree, while 67.50% were married. Those with a family size of 3–4 people accounted for 58.80%, while 47.50% had between 1 and 15 years' experience in durian farming. Farmers with a cultivation area of 1–25 rai accounted for 81.30% and 78.80% had a durian yield of 1–2,000 kg per rai. Farmers achieving an average durian price of 91–120 baht per kilogram accounted for 67.50%, while 82.50% had a production cost of 1–340,000 baht per rai. Farmers with a revenue of 1–1,400,000 baht per rai accounted for 90.00% as reflected in Table 1.

Farmers' knowledge level on the use of the Windy.com application

The results revealed that most farmers, 65 (81.20%), had a high level of knowledge of Windy.com. Ten farmers (12.50%) had a moderate level of knowledge, while only five farmers (6.30%) had a low level of knowledge. These findings demonstrated that most farmers had a good understanding of the application.

Table 1. Personal information

(N = 80)

Personal information	Number	Percentage
Gender		
Male	45	56.30
Female	35	43.80
Age (Years)		
Under 41	14	17.40
41–50	25	31.30
51–60	29	36.30
Over 60	12	15.00
Education		
Less than a vocational education	23	28.60
Vocational education	17	21.30
Associate degree or equivalent	1	1.30
Bachelor's degree	32	40.00
Postgraduate degree	7	8.80
Marital Status		
Single	15	18.70
Married	54	67.50
Widowed or divorced	11	13.80
Family Members		
1–2	16	20.00
3–4	47	58.80
More than 5–6 members	17	21.20
Durian Farming Experience (Years)		
1–15	38	47.50
16–30	26	32.50
More than 31–45	16	20.00
Durian Plantation Size (Rai)		
1–25	65	81.30
More than 26–50	15	18.70
Durian Yield (Kilograms per Rai)		
1–2,000	63	78.80
More than 2,001–4,000	17	21.20
Average Price of Durian (Baht per Kilogram)		
61–90	13	16.30
91–120	54	67.50
121–150	13	16.30
Cost of Durian Production (Baht per Rai)		
1–340,000	66	82.50
More than 340,001–680,000	14	17.50
Income from Durian Production (Baht per Rai)		
1–1,400,000	72	90.00
More than 1,400,001–2,800,000	8	10.00

Table 2. Farmers' knowledge level on the use of the Windy.com application

(N = 80)

Level of knowledge	Number	Percentage
Low (0–59%) Score 0–8 points	5	6.30
Moderate (60–79%) Score 9–11 points	10	12.50
High (80–100%) Score 12–15 points	65	81.20
Total	**80**	**100.00**

Attitude of farmers towards the use of the Windy.com application

The farmers demonstrated a positive attitude towards the use of the Windy.com application ($\mu = 3.89$, $\sigma = 0.54$) (Table 3).

They had a positive attitude towards the weather information ($\mu = 3.79$, $\sigma = 0.68$). Farmers believed the app's data was acerated and updated quickly.

The content of the weather information showed the highest level of positivity ($\mu = 4.08$, $\sigma = 0.69$). Farmers considered the content to be clear, easy to understand, and helpful for making decisions.

The farmers had a positive attitude towards performance ($\mu = 3.90$, $\sigma = 0.65$). Specifically, farmers appreciated the speed of data loading and ease of navigation.

The farmers had a positive attitude towards the benefits and applicability of the app ($\mu = 3.80$, $\sigma = 0.60$) and considered it to be a useful tool for monitoring and analysing the weather.

In conclusion, most farmers had a positive attitude towards the Windy.com application, especially regarding the clarity of its content and the benefits of weather tracking. Nevertheless, there were still limitations in data coverage and processing consistency.

Farmers' acceptance level of the Windy.com application

The farmers exhibited a high level of acceptance towards the application, as demonstrated by the high score ($\mu = 4.09$, $\sigma = .74$). When each dimension examined, Perceived Ease of Use received an overall high score ($\mu = 3.99$, $\sigma = .73$), indicating that farmers perceived the application as easy to use, uncomplicated, and quick to learn. Perceived Usefulness also recorded a high overall score ($\mu = 4.05$, $\sigma = .80$), demonstrating that farmers recognized clear benefits of the application in durian production planning, weather monitoring, and production risk reduction. In addition, intention to use received a very high overall score ($\mu = 4.23$, $\sigma = .80$), reflecting farmers' intention to continue using the application in the future, their willingness to recommend it to other farmers, and their desire to learn more about Windy.com. (Table 4).

Table 3. Farmers' attitude towards the use of the Windy.com application

Attitude Towards the Use of the Application	μ	σ	Attitude Level
Weather Information	**3.79**	**.68**	**Positive**
The application provides comprehensive and rapidly updated weather data.	3.99	.86	Positive
The information displayed in the application is accurate and reliable.	3.91	.91	Positive
The presentation of data in the application makes it easy to understand the weather.	4.04	.80	Positive
Some information in the application does not match the actual weather conditions.	2.51	1.03	Neutral
The weather information in the application does not cover all areas comprehensively.	2.44	1.12	Neutral
Content of the Weather Information	**4.08**	**.69**	**Positive**
The content in the application is clearly explained and easy to understand.	4.03	1.01	Positive
The application provides important weather-related information.	4.36	.75	Positive
The content in the application is beneficial and helps improve decision-making.	4.44	.86	Positive
The explanation of the content in the application is complex and difficult to understand.	2.36	.81	Negative
Some content in the application is outdated or inaccurate.	2.06	1.02	Negative
Performance	**3.90**	**.65**	**Positive**
The application loads and responds quickly.	4.09	.83	Positive
Navigation in the application is smooth and user-friendly.	3.91	.90	Positive
The data processing speed of the application is efficient.	3.80	.96	Positive
The application often experiences issues with data loading speed.	2.13	.96	Negative
The application has consistent problems with data processing.	2.16	1.16	Negative
Benefits and Applicability	**3.80**	**.60**	**Positive**
The application is a useful tool for weather tracking.	4.35	.74	Positive
The features in the application enhance the efficiency of weather analysis.	4.19	.74	Positive
Using the application allows for better advanced weather forecasting.	4.21	.83	Positive
Some features in the application do not provide the necessary data.	2.90	1.17	Neutral
The application cannot assist in decision-making regarding production management.	2.81	1.23	Neutral
Overall	**3.89**	**.54**	**Positive**

Table 4. Adoption of the Windy.com application

Perception of Acceptance	μ	σ	Level of Acceptance
Perceived Ease of Use	**3.99**	**.73**	**High**
The application is user-friendly and not complex.	3.96	.90	High
Learning to use the application is straightforward.	3.70	.99	High
The application facilitates production planning and resource management within the farm.	4.11	.87	High
The application operates efficiently.	4.06	.93	High
Overall, the application is beneficial.	4.14	.85	High
Perceived Usefulness	**4.05**	**.80**	**High**
The application enhances the efficiency of durian production planning.	4.04	.81	High
The application makes weather monitoring more convenient and faster.	4.09	.94	High
Using the application reduces the risks associated with durian production.	4.05	.88	High
The application provides useful and up-to-date information for managing durian production.	4.05	.85	High
The use of the application improves decision-making in durian production.	4.05	.91	High
Intention to Use	**4.23**	**.80**	**Very High**
You intend to continue using the application in the future.	4.30	.86	Very High
You will use the application as the primary tool for weather monitoring.	4.14	.88	High
You would recommend the application to other farmers.	4.24	.86	Very High
You intend to learn more about using the application.	4.24	.87	Very High
You intend to improve your use of the application.	4.25	.86	Very High
Overall	**4.09**	**.74**	**High**

Factors influencing farmers' acceptance of the windy.com application

Multiple regression was investigated factors influencing farmers' acceptance of the Windy.com application. The result revealed that attitude was the only factor that demonstrated a statistically significant relationship with application acceptance at the 0.01 significance level ($\beta = 0.67$, $p < 0.01$). This finding indicated that farmers who more positive attitude towards the application were more likely to accept its use.

In contrast, demographic and production-related factors, including gender, age, education level, durian planting experience, durian yield, durian production

costs, and knowledge, did not exhibit statistically significant relationships with farmers' acceptance of the Windy.com application (p >0.05) (Table 5).

Table 5. Factors influencing the adoption of the Windy.com application

Model	B	Std. Error	Beta	t	p-values
(Constant)	-1.54	.89		-1.72	.08
Gender	.01	.13	.01	.11	.90
Age	.01	.14	.01	.12	.90
Education	.01	.01	.10	1.07	.28
Durian Farming Experience	-.00	.00	-.06	-.60	.54
Durian Yield	1.715E-5	.00	.06	.63	.52
Cost of Durian Production	2.177E-7	.00	.07	.67	.50
Knowledge	.04	.04	.08	.96	.33
Attitude	1.42	.19	.67	7.38	< 0.01**

1/: Statistically significant at the .05. level, R =. 0.685, R^2 = 0.470. Sig < 0.01**

Discussion

The results of this study indicated that most durian farmers were male (56.30%) and aged between 51 and 60 years (36.30%). Approximately 40% of the respondents held an undergraduate degree, which was consistent with the findings of Charoenpituk *et al*. (2024). Most farmers were married (67.50%) and lived in households comprising an average of three to four members. This finding was comparable to that of Mankeb *et al*. (2014), who reported that durian farmers in Koh Samui had small households with an average of three members.

Nearly half of the farmers 47.50% had between 1 and 15 years of experience in durian cultivation and managed farm areas ranging from 1 to 25 acres, indicating that most respondents operated small-scale agricultural enterprises. This pattern was consistent with the study by Prapruit *et al*. (2022), who examined the implementation of Good Agricultural Practices (GAP) in Narathiwat Province and found that most durian farmers were male, owned small to medium plantations, and continued to face challenges related to production efficiency. In terms of productivity, most farmers produce an average of 1,000 to 2,000 kilograms per rai (78.80%) and sold their produce at an average price of 91–120 baht per kilogram (67.50%). The average production cost per rai ranged from 1 to 340,000 baht (82.50%), generating a total income of between 1.0 and 1.4 million baht. These findings confirmed that durian constituted the primary cash crop and a major source of household income, which aligned with the findings of Meehat *et al*. (2025), who reported that durian farmers in Rayong Province relied heavily on premium markets to enhance income through quality-based value creation.

The findings further revealed that durian farmers demonstrated a high level of knowledge regarding the use of the Windy.com application (81.20%), suggesting a strong potential for the adoption of digital tools in agricultural production planning. This result was consistent with Chuang *et al*. (2020), who surveyed 423 farmers in Taiwan and found that over 70.00% possessed basic knowledge and skills related to smart farm technologies, which contributed to improvements in the production process. Similarly, Okoroji *et al*. (2021) reported a direct relationship between farmers' digital knowledge and their adoption of agricultural applications in Nigeria, noting that farmers with higher levels of education were twice as likely to use such applications compared to those with lower educational attainment.

In terms of attitude, farmers demonstrated a positive view towards the use of Windy.com ($\mu = 3.89$, $\sigma = 0.54$), especially regarding the content, which had the highest average positivity ($\mu = 4.08$). Farmers perceived the application as clear, informative, and easy to use. This finding was consistent with Adesiji *et al.* (2024), who emphasized that usability and user-friendly design were critical determinants of farmers' attitudes towards agricultural mobile applications.

Farmers also demonstrated a high level of acceptance towards Windy.com ($\mu = 4.09$, $\sigma = 0.74$), with intention to use receiving the highest mean score among acceptance dimensions ($\mu = 4.23$, $\sigma = 0.80$). This finding aligned with Okai *et al*. (2024), who studied the adoption of smart agriculture systems using the Technology Acceptance Model (TAM), revealing that perceived usefulness (PU) and perceived ease of use (PEOU) directly affect attitudes and usage intentions ($\beta = 0.41$ and $\beta = 0.36$, $p < .01$). Intention to use had the highest average compared to other acceptance dimensions and was the best predictor of actual usage behaviour ($\beta = 0.52$, $p < 0.01$). Similarly, Aung *et al*. (2025) reported that PU and ease of use are major factors influencing the acceptance of agricultural apps in Thailand. In contrast, Abdullahi *et al*. (2021) reported that the adoption of ICT in the agricultural sectors of developing countries remained limited due to infrastructural constraints and restricted access to information. These contrasting findings underscored the importance of project-based support and community enterprise networks in reducing structural barriers and creating a supportive environment for technology adoption.

The findings further indicated that attitude emerges as the sole factor exerting a statistically significant influence on acceptance ($\beta = 0.67$, $p < .01$), while demographic and knowledge factors did not demonstrate significant effects. This finding was consistent with Yeo *et al*. (2024), who identified attitude as a critical mediating factor between perceived usefulness, perceived ease of use, and actual behaviour. Likewise, Ntsoane *et al.* (2025) found that attitudinal factors played a more decisive role than demographic variables in shaping ICT

adoption decisions among smallholder farmers. Likewise, Ntsoane *et al*. (2025) found that attitudinal factors played a more decisive role than demographic variables in shaping ICT adoption decisions among smallholder farmers. However, these findings contrasted with those of Mishra *et al.* (2024) and Amoussouhoui *et al*. (2024), who reported that digital knowledge and demographic characteristics influenced technology adoption. Such discrepancies may be attributed to the characteristics of the study sample and the presence of continuous training and institutional support. This interpretation was supported by Hennink (2022) and Szabo *et al*. (2021).

From a practical perspective, the finding that attitude was the key determinant of technology acceptance carried important implications. It suggested that strategies to promote technology adoption in the agricultural sector should extend beyond enhancing farmers' knowledge to fostering positive attitudes by emphasizing information reliability, practical benefits, and ease of use. This interpretation aligned with the recommendations of Kerdsriserm *et al*. (2024) and Aung *et al*. (2025).

Acknowledgements

This study, entitled "Determinants Influencing the Adoption of Windy.com Application among Large-Scale Durian Farmers' Groups in Rayong Province, Thailand," was financially supported by King Mongkut's Institute of Technology Ladkrabang [KREF016717]. The authors would like to express their sincere gratitude to the adviser for providing valuable guidance and to the durian farmers involved in the Innovation Project on Production and Marketing Information Management to Improve the Quality of Durian Production for the Premium Market for their kind participation in this research.

Conflicts of Interest

The authors declare no conflict of interest.

References

Adesiji, G. B., Ogunlade, I. and Adekunle, O. (2024). Farmers' perceived rating and usability attributes of mobile phone apps. Digital Agricultural Technologies, 3:45-58.

Abdullahi, H. O., Hassan, A. A., Mahmud, M. and Ali, A. F. (2021). Determinants of ICT adoption among small scale agribusiness enterprises in Somalia. International Journal of Engineering Trends and Technology, 69:68-76.

Agricultural Technology and Innovation Center, Bank for Agriculture and Agricultural Cooperatives (2023). Windy application: Weather forecasting for farmers. Retrieved from https://www.gosmartfarmer.com/innovation/22133

Amoussouhoui, R., Arouna, A., Ruzzante, S. and Banout, J. (2024). Adoption of ICT4D and its determinants: A systematic review and meta-analysis. Heliyon, 10:9.

Aung, N., Thein, Z. M. M. and Tun, Z. M. (2025). Investigating farmers' adoption of mobile Agri-Tech: A TAM approach. Journal of Agricultural Informatics, 16:45-60.

Bloom, B. S. (1967). Evaluation of learning in secondary school. New York: McGraw–Hill Book Company Inc.

Boonchai, K. (2020). Agriculture and global food security in the era of climate change. ThaiPublica. Retrieved from https://thaipublica.org/2021/07/thai-climate-justice-for-all05/

Buathong, P. (2017). Factors affecting the decision of durian cultivation among farmers in Angkiri Sub-district, Makham District, Chanthaburi Province (Master Thesis). Burapha University, Thailand.

Charoenpituk, S., Suwanmaneepong, S., Llones, C. and Kerdsriserm, C. (2024). Community enterprise quality management of durian exports in Ban Khao Hin Thaen, Wang Chan District, Rayong Province, Thailand. International Journal of Agricultural Technology, 20:983-1000.

Chuang, J. H., Wang, J. H. and Liou, Y. C. (2020). Farmers' knowledge, attitude, and adoption of smart agriculture technology in Taiwan. International Journal of Environmental Research and Public Health, 17:7236.

Department of Internal Trade, Ministry of Commerce (2024). Durian export report of Thailand. Bangkok, Thailand: Author.

Hennink, M. M. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. Social Science & Medicine, 292:114523.

Kerdsriserm, C., Suwanmaneepong, S. and Praneetvatakul, S. (2024). Assessment of farmers' acceptance, satisfaction, and utilization of mobile application for rice production cost and return in Chachoengsao Province, Thailand. International Journal of Agricultural Technology, 20:643-654.

Mankeb, P. (2016). The use of computers for agricultural analysis (2nd ed.). Bangkok, Thailand: Faculty of Agricultural Technology, King Mongkut's University of Technology North Bangkok.

Mankeb P., Limunggura T., In-go A. and Chulilung P. (2014). Adoption of Good Agricultural Practices (GAP) by durian farmers in Koh Samui District, Surat Thani Province, Thailand. Kasetsart Journal of Social Sciences, 35:215-226.

Meehat, N., Suwanmaneepong, S. and Kerdsriserm, C. (2025). Factors affecting the sharing of information on quality durian production by farmers in Rayong Province, Thailand. International Journal of Agricultural Technology, 21:123-136.

Mishra, N., Bhandari, N., Maraseni, T., Devkota, N., Khanal, G., Bhusal, B., Basyal, D. K., Paudel, U. R. and Danuwar, R. K. (2024). Technology in farming: Unleashing farmers' behavioral intention for the adoption of agriculture 5.0. PLOS ONE, 19:e0308883.

National Statistical Office of Thailand. (2023). Agricultural census 2023: GIS-based presentation of results. Retrieved from https://esurvey.nso.go.th/portal/apps/dashboards/83b24dd5011940689cd011e9d5259afa

Ntsoane, M. M., Ndoro, J. T. and Wayi-Mgwebi, N. (2025). Multivariate Probit Model Analysis of the Factors Influencing Smallholder Farmers' Choice of ICT Tools: A Case Study of Mpumalanga, South Africa. Agriculture, 15:1817.

Okai, G. E. Y., Agangiba, W. A. and Agangiba, M. (2024). Assessment of farmers' acceptance of intelligent agriculture system using Technology Acceptance Model. International Journal of Computer Applications, 186:16-22.

Okoroji, V., Lees, N. J. and Lucock, X. (2021). Factors affecting the adoption of mobile applications by farmers: An empirical investigation. African Journal of Agricultural Research, 17:19-29.

Prapruit, P., Wikraisakul, J. and Pomsakul, A. (2022). Knowledge and practice following Good Agricultural Practice (GAP) in durian cultivation along the border in Srisakorn district, Narathiwat Province. International Journal of Agricultural Technology, 18:1727-1738.

Seeda, W. (2024, November 10). Using weather information for precision durian farming [Interview by A. Thonoi]. In Innovation project for durian production and marketing management, Rayong Province.

Szabo, S., Rigg, J., and Ros, B. (2021). Agricultural productivity, aging farming workforce and rural transformation in Thailand. Frontiers in Sustainable Food Systems, 5:728120.

Thongpanchang, W. (2003). Durian: Cultivation handbook. Bangkok, Thailand: Kasetsart University, Community Agriculture Book Project.

Wanjohi, A. M. and Syokau, P. (2021). How to conduct Likert scale analysis. Kenya Projects Organization. Retrieved from https://kenpro.org/how-to-conduct-likert-scale-analysis/

Yeo, M. L. and Keske, C. M. (2024). From profitability to trust: Factors shaping digital agriculture adoption. Frontiers in Sustainable Food Systems.

(Received: 30 September 2025, Revised: 13 April 2026, Accepted: 9 May 2026)