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Technology Acceptance Level among Fish Cracker's Entrepreneurs in East Coast Economic Region (ECER)

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Abstract: Technology plays an important role in fish cracker processing. Most of small scale food industries in East Coast Economic Region (ECER) were still using traditional way in making fish cracker. Previous studies also stated that most of SME's entrepreneurs refused to use technology because of financial barriers. This study was conducted to observe the level of technology acceptance among fish cracker entrepreneurs in ECER. A total of 300 fish cracker's entrepreneurs in East Coast Economic Region (ECER) were selected as respondents where a developed questionnaire was used to gain the data. For analysis, the descriptive analysis was performed by using SPSS Software. Based on the results obtained, all of the fish cracker's entrepreneurs gave a positive feedback towards technology in fish cracker processing. However, majority of them refused to use technology because of limited financial resources. Furthermore, the fish cracker processing technology is quite expensive and they were not afford to have it without any support from the responsible agencies. This study proved that Technology Acceptance Model (TAM) were suitable in this case especially to study the user's acceptance of technology. All of the factors in TAM can be applied to know the level of technology acceptance among fish cracker's entrepreneurs in ECER. The use of technology is recommended in fish cracker processing.

Key words: Fish cracker processing, small scale food industries, technology acceptance, fish cracker entrepreneurs, technology, resources

INTRODUCTION

Fish cracker is one of the traditional food in Malaysia and also one of the popular traditional snacks in East Coast region of Peninsular Malaysia. Traditional foods is a proof the expression of culture, history and lifestyle of local people will not be forgotten and can be preserve for new generation (Omar *et al*., 2011). Fish cracker industries are more focus on East Coast region of Peninsular Malaysia because of the strategic location which faces South China Sea. The economic activities at the East Coast region are depends on producing fisheries based products such as fish crackers, drying fish, anchovies sauce (budu) fish sausage and prawn crackers.

Government give a big support in agriculture sector especially in food processing because food industries give a big contribution towards the Malaysian's economic growth. The use of technology in food processing industry is crucial to ensure the smooth processing activity besides the energy saving and time consuming. Floros *et al*. (2010) stated that the first step in food processing activity is to learn how to cook the food then how to transform, preserve and store it safely. The uses of technology led to a better food quality and ensure the food safety. Technology evolution in terms of machinery and also Information Technology (IT) give a big contribution as a beneficial tool to various industries in Malaysia. As mentioned by Abdullah *et al*. (2016) the behaviour of Malay entrepreneurs are mostly refused to use technology in food processing and they still employed traditional technology practices. Although, implementing technology in the process of making fish cracker is very important but the existing of fish cracker's entrepreneurs still using traditional way, this phenomenon has led to low productivity of fish cracker. The problem in terms of lack of knowledge and limited financial sources become the biggest reason why entrepreneurs in small-scale industries refused to use technology even though they knew the importance of technology in the fish cracker's processing (Abdullah *et al*., 2016). Furthermore, there are also limited studies on technology application within owners of small-scale enterprise (Sugiharto *et al*., 2010). This study was developed to determine the level of technology acceptance among fish cracker's entrepreneurs in ECER.

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Food processing technology: Higher profit and changes in lifestyle are anticipated to change food consumption habits to healthier and higher quality products. Based on Malaysian Investment Development Authority in 2012, Malaysian food industry was conquered by small and medium scale firms (Ayupp, 2013). By following the government's focal point in the sector of agriculture the Malaysian food processing industry has become the important role in the agro-based industry. A study done by Mulyaningrum *et al.* (2008) clarified that one of the several issues that give a big impact in the areas of food processing industries are more often caused by lack of proper technology. Three states in East Coast region of Peninsular Malaysia namely; Kelantan, Terengganu and Pahang considered as amongst undeveloped regions and most of small scale entrepreneurs still employed traditional method in food processing. The same situation supported by Shamsudin *et al.* (2011) that most of Small Medium Enterprise (SME) entrepreneurs are practicing traditional technology with low quality of raw materials and low product innovation. Innovation is the key element in food industry in order to compete with other competitors in the same industry but this activity will be complicated in SMEs sectors in Malaysia because the process of introducing new products or improving the existing product needed a proper or advanced technology for business development (Nor *et al.*, 2016). The use of technology will help to improve fish cracker industry in ECER that can lead to the innovation of the product and produce various types of fish cracker. Hence, it can help in improving the marketing strategy of their companies.

Technology acceptance: Technology is the collection of tools including machinery, modifications, arrangements and procedures used by humans. All entrepreneurs need technology to make sure a smooth processing activity. Besides, the use of technology can help in entrepreneurial development. Technology can work as a method, tool, process or modification in food processing which can be as a support element in entrepreneurial development (Goutam and Sarkar, 2015). Technology and entrepreneurship are closely related. A successful entrepreneur will have a clear concept of what they are trying to achieve in their business and technology plays an important role by helping them to achieve their goals more briskly (Gotam and Sarkar, 2015).

Technology Acceptance Model (TAM) has been employed for this study. It was developed by Davis *et al.* (1989) which is an adaptation to the theory of reasoned action. This model were commonly used by researchers which focusing user's acceptance of a technology (Zaremohzzabieh *et al.*, 2015). Moreover, Samah *et al.* (2011) concluded that TAM highlighted three factors that influence user's acceptance of technology which

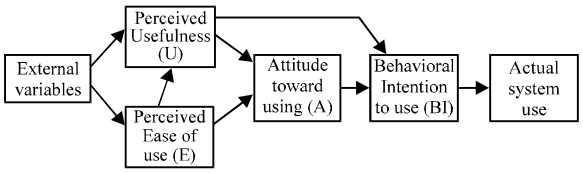

Fig. 1: Technology Acceptance Model (TAM) by Davis *et al.* (1989)

are attitude, perceive usefulness and perceive ease of use. Perceive usefulness and perceive ease of use are crucial in explain the differences in user's intention. Based on the model that was developed by Davis attitude of the user towards technology was a key determinant of whether the user will actually use or reject the technology. The attitude was influenced by perceive usefulness and perceive ease of use. Meanwhile, perceive ease of use have direct influence on perceive usefulness. Davis *et al.* (1989) defined that perceive usefulness is a degree of individual believes that using particular technology will enhance the productivity while perceive ease of use is the degree of individual belief using technology would be free of effort. In this study, perceive usefulness can be relate to the fish cracker's entrepreneurs believed on the usage of technology in fish cracker processing would be useful in improving the productivity of the product.

MATERIALS AND METHODS

This research is quantitative study which is as a form to get data and information. The data collected in the ECER area (Kelantan, Terengganu and Pahang) to identify the level of technology acceptance among fish cracker's entrepreneurs. The instrument employed in this study is a self-administered questionnaire which was developed before the process of data collection. The questionnaire consists of eight parts which all items based on literature review and past studies. For the purpose of this study, two parts were selected including demographic profile and technology acceptance in fish cracker's processing. All items were measured by using five-point likert scale ranging from 1 representing "strongly disagree" to 5 representing "strongly agree". There were 300 respondents involved in this survey. SPSS Software has been employed for this study.

RESULTS

Demographic profile: The demographic profile comprises gender, age of respondents, educational level, main source of income, types of business ownership, initial capital and experience as a fish cracker's entrepreneurs. Table 1 show the demographic profile of the respondents that contributed in this survey, majority respondents were

Table 1: Socio demographic profile of the respondents

Characteristics	Frequency (n = 300)	Percentage	Mean	SD
Gender				
Male	128	42.7		
Female	172	57.3		
Age (years)				
≤20	15	5.0	40.6	13.600
21-30	69	23.0		
31-40	71	23.0		
41-50	69	23.0		
51-60	50	16.6		
61-70	24	8.0		
≥70	2	0.7		
Educational level				
Primary school	71	23.7		
SRP/PMR	45	15.0		
MCE/SPM	144	48.0		
STPM/Diploma	34	11.3		
Bachelor degree	6	2.0		
This business as main source of income				
Yes	288	96.0		
No	12	4.0		
Type of business ownership				
Individual	280	93.3		
Partnership	20	6.7		
Initial capital (RM)				
≤10, 000	97	32.3	21273.3	14192.13
10, 001-20, 000	84	28.0		
20, 001-30, 000	42	14.0		
≥30, 001	77	25.7		
Experience as fish cracker's entrepreneurs (years)				
≤10	170	56.7	12.0	9.60
11-20	85	28.3		
21-30	33	11.0		
31-40	10	3.3		
41-50	2	0.7		

Table 2: Technology acceptance among fish cracker's entrepreneurs in ECER

	Percentage					
Statements	1	2	3	4	5	Mean
I do not really know about fish cracker processing technology	39.3	46.7	13.0	01.0	00.0	1.76
I think fish cracker processing technology is very complicated	48.7	41.0	08.3	01.0	01.0	1.65
I do not have time to update with the latest fish cracker processing technology	41.7	49.0	07.3	02.0	00.0	1.70
I think fish cracker processing technology is not a priority in my business	52.3	42.7	03.0	01.7	00.3	1.55
I think there is no interest in using fish cracker processing technology	50.3	43.7	03.7	02.0	00.3	1.58
I think the cost for using fish cracker's processing technology is too high	00.0	01.3	03.7	49.3	45.7	4.39
I was not exposed to the benefits of fish cracker processing technology	34.3	56.0	07.7	02.0	00.0	1.77

female with 57.3% compared to male which is 42.7%. The youngest age of respondents was <20 years with 5.0% and the oldest age which is 70 years with 0.7%. The distribution of age categories for the respondents showed the majority of the respondents were aged between 31-40 years (23.7%) while the mean score recorded was 40.64 years. In terms of educational level of the respondents, majority respondents had obtained MCE/SPM certificate with 48% and followed by 23.7% had completed primary school education. Most of respondents start up their business with the least initial capital which is less than Ringgit Malaysia (RM) 10, 000 with 32.3% while the mean score (M = RM21273.3). On the other hand, data analysis also showed that 96% of the respondents stated that this business was their main source of income and most of them (93.3%) were individual type of ownership. Besides, the majority of has <10 years experience as a fish cracker's entrepreneurs with the mean score 12 years.

Technology acceptance among fish cracker's entrepreneurs in ECER: Based on result from Table 2, the majority of the respondents were agreed (49.3%) on statement "I think the cost for using fish cracker's processing technology is too high" with the highest mean score (M = 4.39). On the other hand, most of them were strongly disagreed (52.3%) on statement "I think fish cracker processing technology is not a priority in my

Table 3: The level of technology acceptance among fish cracker's entrepreneurs in ECER

Level	Frequency (n = 300)	Percentage	Mean	SD
-	-	-	2.06	0.44
Low (1-2.33)	230	76.7		
Moderate (2.34-3.66)	70	23.3		
High (3.67-5)	0	0		

busines's with the lowest mean score (M = 1.55). Furthermore, most of respondents were disagreed (46.7%) that they don't know about the fish cracker processing technology and strongly disagreed (48.7%) with the statement about the using of fish cracker technology is very complicated. On top of that 49.0% of respondents were disagreed that they have no time to update with the latest fish cracker processing technology and strongly disagreed (50.3%) with the statement about the interest in using fish cracker's processing technology. Meanwhile, 56.0% of them disagreed that they were not exposed to the benefits of fish cracker processing technology.

The level of technology acceptance among fish cracker's entrepreneurs in ECER: Table 3 shows the level of technology acceptance among fish cracker's entrepreneurs in ECER and the mean score was 2.06. Generally, 76.7% of respondents have low level towards the use of technology in fish cracker processing.

DISCUSSION

Based on the findings of this study, most of fish cracker's entrepreneurs refused to use technology in fish cracker processing. It is found that financial has become the major problem that most entrepreneurs faced and caused them to refuse applying advanced technology in fish cracker processing even though they knew the importance of technology in their business. Burhanuddin *et al.* (2009) stated that the problems adopting technology in Small Medium Industries (SMI) are the lack of access to the financial system, human resource constraints and limited or inability. Besides that Burhanuddin *et al.* (2009) also discussed about the limitation of SMI in adopting new technology which is one of them is financial barrier. It is also supported in a study by Mulyaningrum *et al.* (2008) that the limitation of financial access become a major problem among small-scale food industries in Malacca. The cost of the machines and tools that used in the fish cracker's processing are quite expensive as most of them start their business with the minimum initial capital which is less than RM 10, 000. Hence, they need to maintain the traditional way in fish cracker processing activity. Besides that the perception of fish cracker's entrepreneurs in ECER towards the importance of technology and the knowledge about the technology was very positive because most of them knew about the fish cracker processing technology and the role of technology that act as a support element and facilitator of entrepreneurship (Goutam and Sarkar, 2015). Furthermore, they were very interested in using fish craker processing technology if the responsible agencies give a support to the small scale business in ECER especially in term of financial to expand their business and increase the productivity. Based on the findings, it can prove that most fish cracker's entrepreneurs were not fully refused to use fish cracker processing technology but they have to overcome the major problem with the help of responsible agencies to support them. In this modern age, the traditional technique that employed in fish cracker processing was not fully helping them increasing the productivity for entrepreneurial development.

CONCLUSION

Technology plays an important role in entrepreneurship. Fish cracker was one of the traditional foods that give positive impact to the economic development in ECER area as this product were accepted by all people around the world. It can indirectly develop tourism industry in Malaysia by continuing the processing of traditional local foods and also as an additional income to local community.

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