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The influence of service quality on entrepreneurs' satisfaction and intention: An empirical study on MARDI's consultancy and advisory service

(Pengaruh kualiti perkhidmatan terhadap kepuasan dan niat usahawan: Kajian empirikal mengenai perundingan dan khidmat nasihat MARDI)

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Keywords: service quality, structural equation modelling, soft technology, MARDI's SMEs, satisfaction

Abstract

MARDI is one of the agencies under the Ministry of Agriculture and Agro-based Industry that is involved in giving services to MARDI's entrepreneurs' development. The services rendered to MARDI's entrepreneurs was in the form of soft technology such as advisory and consultation services. The study was to measure satisfaction and intention in utilising advisory and consultancy services on soft technology among entrepreneurs under MARDI's guidance. SERVQUAL model was used in this study with six dimensions to measure MARDI's entrepreneurs' satisfaction. Since MARDI's core business is in R&D and innovating new technologies, technology needs to be mentioned as one of the dimensions. Confirmatory Factor Analysis (CFA) indicated that the variables used were fit to service quality model at 0.001 significance. Structural Equation Model (SEM) was used to analyse the relationship among the variables used especially among the SERVQUAL dimensions and satisfaction. From the structural equation model, only four SERVQUAL dimensions, i.e. reliability, responsiveness, assurance and technology were statistically significant while the other two, tangibility and empathy were not significant. Satisfaction was strongly supported by a significant relationship with intention. The study indicated that service quality does act as an important predictor of customer's satisfaction and gave an impact to intention of MARDI's entrepreneurs to continuously use services rendered by MARDI. This study can enable MARDI to improve customer's charter as a guideline to deliver an accurate message and services to MARDI's entrepreneurs. While technology is not the strongest predictor to satisfaction, it does give a significant effect to satisfaction. With that, technology development needs to be taken into account in ensuring that MARDI's technologies are able to meet the needs of entrepreneurs by emphasizing on demand pull against demand push.

Introduction

In a competitive environment, the entrepreneurs can be considered as the main actors, as their competition leads to a reduction in costs and economic efficiency. It also leads the entrepreneurs to provide goods and services that satisfy their consumers through many modernisation processes and the introduction of advanced technologies. Entrepreneurship has an

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impact both on the social and on the economic systems of the country. The solution of many socio-economic problems of unemployment and low income (possibility of forming a middle class among the economically active population) results from the implementation of the entrepreneurship programmes among the population in general. It also gives the possibility of forming a new production of different functional orientation, which in turn leads to the creation of a favourable business and investment environment of the regional or national economic systems. It is common to use the economic indicator as an assessment of entrepreneurial activity. It is a reflection of the intensity of this process in a specific economic region.

The Malaysian government has emphasised on the importance of SMEs in enhancing the dynamism and competitiveness of the manufacturing sector. Entrepreneurship in Malaysia comes with various types of businesses and is growing rapidly. Considerable attention has been given to the provision of industrial infrastructure and amenities to facilitate the expansion of SMEs activities. In order to facilitate the SMEs development, the government through its various Ministries and agencies has developed programmes or specific departments to assist the entrepreneurs so that appropriate assistance and advisory can be given. The Malaysian Agricultural Research and Development Institute (MARDI) is one of the agencies under the Ministry of Agriculture and Agrobased Industry (MoA) which has been mandated to conduct researches in the fields of agriculture science, technical, economy, and social with regards to production, utilisation and processing of all crops (except rubber, oil palm and cocoa), livestock and food and integrated farming. Besides, MARDI also provides technical and advisory services related to agriculture production and food processing to help in the development of agro-based entrepreneurs in Malaysia. MARDI, has developed the Entrepreneurs Development programme managed by the Promotion and Business Development Centre of MARDI. The centre has been mandated to carry out activities to promote and transfer technology generated by MARDI to target groups and to develop techno-entrepreneurs in the field of agro-based, agricultural and livestock industries. This Entrepreneur Development Programme is responsible for providing technical support, entrepreneurial guidance and human capital development and appropriate technology to develop dynamic and sustainable entrepreneurs. This is important as technology plays an important role and has a positive impact on entrepreneurs businesses and to be more efficient and competitive in the local and global markets

As of 2018, there were 429 registered entrepreneurs under the Entrepreneur Development Programme of which 96.7% were involved in the food-based processing industries while the rest were involved in crops and livestock production. The number of MARDI's entrepreneurs from 2011 to 2018 can be referred to in *Table 1*. Though the numbers of registered entrepreneurs fluctuated, it showed an increasing trend over the years.

As can be seen from *Table 1,* the number of MARDI's entrepreneurs was 160 in 2011 and this number increased by 3% in 2012 to 165 entrepreneurs. In 2013, there was a significant increase of 62%

Table 1. Number of MARDI's entrepreneurs (2011 – 2018)

State	No. of entrepreneurs	% growth
2018	429	–14
2017	503	26
2016	399	12
2015	357	31
2014	272	1
2013	268	62
2012	165	3
2011	160	

Source: Business Development and Promotion Centre, MARDI (2018)

of MARDI's entrepreneurs to 268. The least increase of 1% was in 2014 where the number of MARDI's entrepreneurs increased to 357 and 399 in 2015 and 2016 respectively. The number continued to increase to 503 in 2017, however, it decreased by 14% to 429 in 2018.

These groups of entrepreneurs were eligible to use, buy and have hands-on training on the new technologies that were developed by MARDI. However, this study focused on soft technologies for entrepreneurs since hard technologies were transferred to community through commercialisation. Soft technologies provided by MARDI included know-how services such as knowledge-base, advisory and consultation. *Table 2* shows the list of soft technologies services rendered by MARDI. There are services in MARDI which focuses on the agro-food sector as more than 95% of MARDI's entrepreneurs are in the agro-food sector. The soft technologies services rendered by MARDI include advisory services in food processing such as packaging and labeling of food products while hard technology is a visible technology in which the technology is more easily classified such as machinery and equipment.

The Malaysian Agricultural Research and Development Institute, as a research and development institution, is obliged to provide good quality services to its' entrepreneurs in the form of soft technologies such as advisory and consultancy, in processing methods and technical hands-on for hard technologies such as machineries. Machineries are either for farm-use or for manufacturing agro-based products. Soft technologies are more emphasised in providing services for entrepreneurs. Constant, periodical and continuous supervision and services are required to ensure that the technologies benefit MARDI's entrepreneurs. By the same token, MARDI sets a Standard Operating Procedure (SOP) and ISO to ensure that the entrepreneurs are being monitored and advised so that the objective of increasing income and well-being of the entrepreneurs are achieved. Thus, MARDI's entrepreneurs' perception towards what has been provided is crucial. Nonetheless, due to shortage in staffing and advancement of technologies, MARDI was not able to fulfill its promises as stipulated in the SOP and ISO documentations. The shortage of staff at state levels caused some obstacles in monitoring progress or otherwise. Hence there have been complains regarding service quality as being perceived and expected as stipulated in the SOP and ISO. Various complaints transmitted through social media were obtained through monitoring of assigned staff. Through a survey, entrepreneurship satisfaction and dissatisfaction can be identified. From 500 entrepreneurs registered as MARDI's entrepreneurs, only 80% were still active, while the rest had been dropped from becoming MARDI's entrepreneurs based on reasons such as cessation of business, lack

Table 2. List of soft technologies services rendered by MARDI to MARDI's entrepreneurs

No.	Soft technologies services provided by MARDI
1	Processing technology
2	Product quality improvement
3	Quality control
4	Product development
5	Product innovation
6	Process innovation
7	Packaging and labeling
8	Hygiene and sanitation
9	Certificate guidance
10	Factory layout
11	Premises improvement
12	Development of production systems
13	Production mechanism
14	Product analysis
15	Human capital development through training
16	Matching grant

Source: Business Development and Promotion Centre, MARDI (2018)

of capital, closing premises, and switching to other types of businesses.

Being a government agency entrusted to develop technologies to be adopted by entrepreneurs, MARDI is very much concerned about the service quality and what can be done to improve the services as being perceived by entrepreneurs. Entrepreneurs' expectations with regards to service quality of MARDI are also high as MARDI has been one of the government agencies with reputable standing among the public as it is the only agricultural research and development institute in the country. Expectations on services provided or will be provided by MARDI must be one of the best and well-trusted. Nonetheless, not all services rendered by MARDI were at par with the expectations of the entrepreneurs. Thus, there is some dissatisfaction among entrepreneurs with regards to service quality of MARDI.

This study was to investigate the service quality satisfaction of entrepreneurs under MARDI's guidance in utilising the advisory and consultancy services rendered by MARDI on the soft technologies. It is also to identify service quality dimensions of entrepreneur's satisfaction experienced by MARDI's entrepreneurs.

Literature review

Entrepreneurship which is known as global economic driver, has added real value through the creation of new jobs and the production of innovative products and services besides promoting the generation of wealth. The field of entrepreneurship has also led to the renewal of technology, knowledge, techniques and processes which bring new notions of innovation.

Technology can be categorised as soft and hard technologies as described by Jon Dron et al. (2011). Soft technology refers to an entity without a physical form (Zhouying 2001) and intangible part of the development of goods and services. It is classified into eight main groups in terms of application which are commercial technology, social technology, cultural technology, learning through personal feeling and experience (LPFE), soft life technology, soft engineering technology, military soft technology and political technology (Zhouying 2002). This classification of soft technology is based upon resources, application and function.

According to an article published by Albert and David (2017), hard technology refers to the material and tangible aspects of the technology, including those that enable the transformation of materials for the production of new objects and the final physical products that are developed in the companies. Leonard and Sasser (1982) and Rabin (1983) stated that the quality of goods and services have become an acclaimed issue in marketing. As such, an organization has to understand and achieve service quality to satisfy customers' expectations and needs (Chen et al. 2011). SERVQUAL model is a popular model that is applied in management and marketing. With its initial theory introduced by Parasuraman et al. (1985), the model was conducted for a study in maximising quality of each service provided. Mehta and Durvasula (1998) identified SERVQUAL as an appropriate tool for measuring relationship between service quality dimensions and organisational performance in the case of a business-to-business service environment. Despite empirical evidence of the appropriateness of SERVQUAL, critique has met with much enthusiasm (Robinson 1999).

Conceptual framework in *Figure 1* indicates that the six dimensions of service quality determines MARDI's entrepreneur's satisfaction which indirectly gives an indicator to entrepreneur's intention to continuously use services provided by MARDI. Technology exists as one of the dimensions in measuring service quality. According to Felix (2017), the customers generally use certain criteria to evaluate service quality by examining reliability, responsiveness, assurance, empathy and physical aspects. Service quality

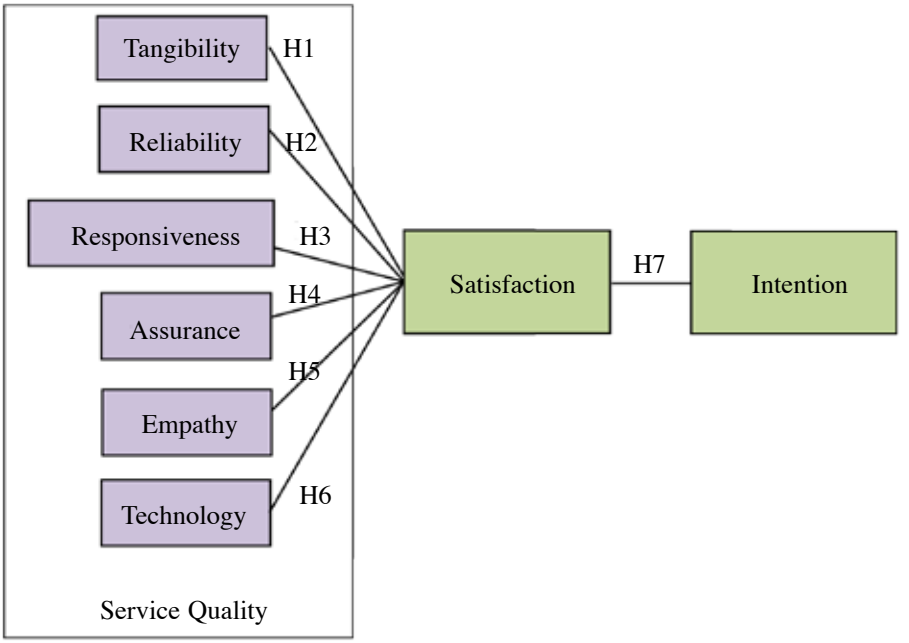

Figure 1. Conceptual framework of service quality

is a determinant in the direction of the relationship between the organization and the entrepreneurs. Many past studies related the relationship between service quality and customers' satisfaction especially in banking. According to Felix (2017), there are inter-related relationships between customers' satisfaction and service quality and the higher the service quality, the higher is the customers' satisfaction. Caruana and Malta (2002) found that service quality is an important input to customers' satisfaction and it will lead to overall customers' satisfaction. The present study indirectly indicates the level of entrepreneurs' satisfaction based on the measurement of service quality. Satisfaction gives a direct effect to intention where it is shown as a linear regression. According to Nachtigall et al. (2003), an ordinary regression analysis considers SEM with several equations simultaneously. The same variable may represent a predictor (repressors) in one equation and a criterion (regressand) in another equation. Such a system of equations is called a model.

Perception-based measures target users with experience using the service based on the hypothesis that users have a clear and accurate perception of current service performance (Hu et al. 2015). Moataz and Julian (2013) mentioned that perception-based measures can be divided into two types which are importance of and satisfaction with listed service attributes. The importance of service attributes reflects users' demands for service quality, and satisfaction reflects users' evaluations of service quality.

Expected service depends on word of mouth (WOM), personal needs and past experiences which are three independent variables that triggers expected service appearances. Parasuraman et al. (1985) mentioned that a customer depends on experience to evaluate service quality. Perceived and expected service depends on the variables of determinants of service quality, the 6 dimensions as shown in *Figure 2* below.

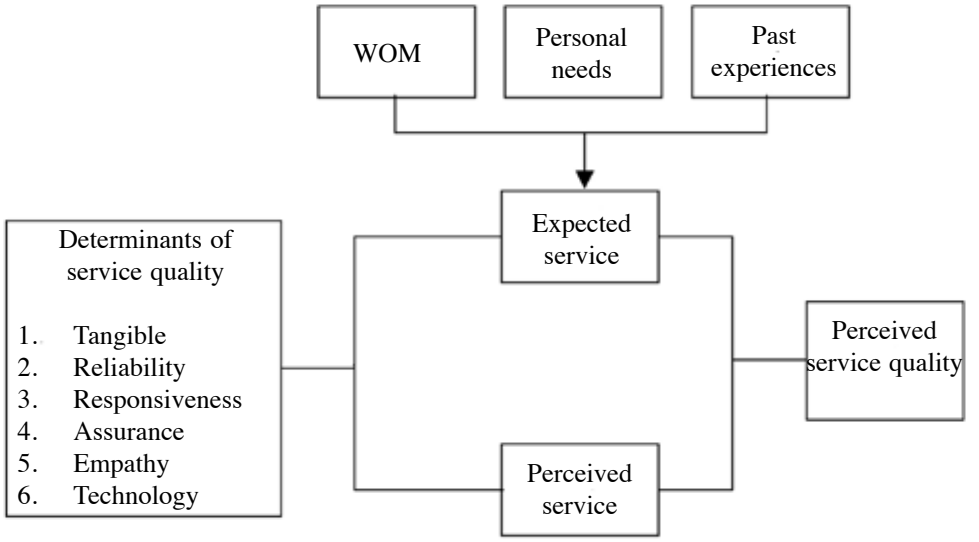

Figure 2. Service quality model after Parasuraman et al. (1985)

Methodology

The sampling frame of this study was MARDI's entrepreneurs. The respondents were selected by simple random sampling technique to ensure that every component of the population received equal chances of being part of the selected sample. The sampling technique, the most straight forward method of probability sampling, allowed sampling error to be calculated and reduced selection bias. Sample size was determined based on 95% confidence level and 5% confidence interval. The questionnaire was developed as an instrument of the study consisting of questions on service quality model. Service quality was measured using five dimensions that was adapted from Soares et al. (2017) with one additional item, technology (Murat et al. 2013). While the entrepreneurs' satisfaction questionnaire was adapted from Lien et al. (2011), the intentions questionnaire was adapted from Parasuraman et al. (2005). The questionnaire was pilot tested by 20 respondents. The survey lasted from April 2017 until December 2017. Two hundred and twenty respondents out of 400 were interviewed using a structured questionnaire and the survey was carried out by a telephone interview. A Likert Scale of 1 to 7 (1 representing strongly disagree while 7 representing strongly agree) was used to measure the service quality, satisfaction and intention of MARDI's entrepreneurs' to repeatedly use services provided by MARDI.

Structural Equation Model (SEM) was used to measure MARDI's entrepreneurs' satisfaction using the programme AMOS. The first step involved a confirmatory factor analysis (CFA) to develop an acceptable measurement model. The CFA process determines whether the hypothesized structure provides a good fit to the data, or in other words, that a relationship between the observed variables and their underlying latent, or unobserved constructs exist (Child 1990). Besides testing for model fit, the CFA for individual variable employed three other major processes which were convergent validity, construct reliability and discriminant validity. It can be seen that from the CFA to the measurement model, it produces a coefficient called factor loading. Factor loading will be used to see the suitability of the dimensions in developing factor.

Maximum Likelihood (ML) estimation was used to test hypotheses about models and parameters. It may not be very precise and may even generate a line that lies above or below the data points with small samples. To use ML, one must first specify the joint density function for all observations. The regression was used to measure structural model of the study. The relationship between service quality, satisfaction and the intention of entrepreneurs to continuously use services from MARDI were measured. Seven hypotheses were developed from the main research question prior to determining the relationship between the independent variables (tangibility, reliability, responsiveness, assurance, empathy and technology) and dependent variables (satisfaction and intention) as shown in *Table 3*. These hypotheses were analysed using SEM analysis.

Results and discussion

According to CFA results, all constructs and reliability in terms of composite values along with entire values ranged between 0.622 and 0.979. The results were slightly above the recommended scores of 0.60 as reported by Bagozzi and Yi (1988). *Table 4* shows the standardised factor loadings, Cronbach's alpha, Composite Reliability (CR) and average variance extracted (AVE) from Service Quality Entrepreneur's Satisfaction. All standardised loadings were having a value greater than 0.6, hence a proof for achieving convergent reliability (Anderson and Gerbing 1988).

Reliability test on the basis of AVE for the measurement model was all above 0.50, which was consistent with the 0.50 value recommended by Fornell and Larcker (1981). Nonetheless, Hair et al. (2010) suggested that the variance expressed by the path is above the variance elucidated by the measurement error. In addition, all Cronbach alpha values were above 0.70, therefore Goodness of Fit (GFI) indices suggested that the measurement model shows a satisfactory data fit and the outcomes of the entire fit indices generated an adequate fit as shown in *Table 4*. In summary, the evaluation outcomes of all the measurement model latent variables met unidimensionality, validity (convergent and discriminant) and reliability requirements. The strength as well as the quality of the measurement model were confirmed to be eligible to proceed with the next analyses. The analysis met GOF for all constructs. Values of Comparative Fit Index (CFI) and Turker-Lewis Index (TLI) fell above 0.90 while values of GFI and Normed Fit Index (NFI) fell below 0.90. There is no study yet that suggests which fitness indices to use. However, Hair et al. (1995, 2010) and Holmes-Smith et al. (2006) recommended to use at least one fitness index from each category of the model fit. *Table 5* shows three model fit categories, namely, Absolute Fit, Incremental Fit and Parsimonious Fit.

Table 6 shows that validity was achieved (both convergent and discriminant validity) as evidenced by the AVE values which were all above 0.5, reliability as evidenced by the CR values which were

Table 3. Results of hypotheses testing using SEM

	Hypothesis statement
H_1	Tangibility has a significant effect on entrepreneur's satisfaction
H_2	Reliability has a significant effect on entrepreneur's satisfaction
H_3	Responsiveness has a significant effect on entrepreneur's satisfaction
H_4	Assurance has a significant effect on entrepreneur's satisfaction
H_5	Empathy has a significant effect on entrepreneur's satisfaction
H_6	Technology has a significant effect on entrepreneur's satisfaction
H_7	Satisfaction has a significant effect on entrepreneur's intention

Table 4. Summary of CFA results for measurement Model of Service Quality Entrepreneur's satisfaction

Item	Construct	Factor loading	CR	AVE	Cronbach's alpha
	Tangibility		0.906	0.665	0.926
TANG1		0.820			
TANG2		0.979			
TANG3		0.919			
TANG4		0.65			
TANG5		0.652			
	Reliability		0.907	0.662	0.925
REL1		0.709			
REL2		0.79			
REL3		0.883			
REL4		0.861			
REL5		0.814			
	Responsiveness		0.902	0.650	0.909
RES1		0.692			
RES2		0.827			
RES3		0.811			
RES4		0.844			
RES5		0.846			
	Assurance		0.934	0.740	0.945
ASS1		0.836			
ASS2		0.889			
ASS3		0.897			
ASS4		0.891			
ASS5		0.781			
	Empathy		0.872	0.633	0.869
EMP1		0.88			
EMP2		0.871			
EMP3		0.783			
EMP5		0.622			
	Technology		0.916	0.688	0.918
TECH1		0.751			
TECH2		0.757			
TECH3		0.908			
TECH4		0.895			
TECH5		0.822			
	Satisfaction		0.935	0.828	0.932
SAT1		0.969			
SAT2		0.836			
SAT4		0.92			

(cont)

Table 4. *(cont.)*

Item	Construct	Factor loading	CR	AVE	Cronbach's alpha
	Intention		0.914	0.681	0.914
INT1		0.838			
INT2		0.794			
INT3		0.866			
INT4		0.811			
INT5		0.815			

Source: Field survey (2017)

Table 5. Summary of (GFI) of measurement model for Service Quality Entrepreneur's satisfaction

Name of category	Name of index	Level of acceptance	Value (Results)
Factor loading	Standardised regression weight	Weight >0.5	All factor loading achieved the level of acceptance except
Absolute Fit	ChiSq	P >0.05	0.000
	RMSEA	RMSEA <0.08	0.057
	GFI	GFI >0.9	0.801*
Incremental Fit	CFI	CFI >0.9	0.942
	TLI	TLI >0.9	0.935
	NFI	NFI >0.9	0.874*
Parsimonious Fit	ChiSq/df	ChiSq/df <5.0	1.721

Source: Field survey (2017)
*Not achieved the level of acceptenace

Table 6. CFA results summary for validity (convergent and discriminant) as measurement model

Construct	CR	AVE	TANG	REL	RES	ASS	EMP	TECH	SAT	INT
TANG	0.906	0.665	0.815							
REL	0.907	0.662	–0.151	0.814						
RES	0.902	0.65	0.006	0.637	0.806					
ASS	0.934	0.74	0.548	–0.047	0.025	0.860				
EMP	0.872	0.633	0.026	0.331	0.166	–0.034	0.796			
TECH	0.916	0.688	–0.036	0.686	0.590	–0.053	0.224	0.829		
SAT	0.935	0.828	0.087	0.291	0.355	0.028	0.171	0.411	0.910	
INT	0.914	0.681	0.081	0.149	0.427	0.08	0.114	0.348	0.390	0.825

Note: Diagonals represent the square root of the AVE values while the other entries represent the correlation
Source: Field survey (2017)

all above 0.7, and the discriminant validity based on the square root of the AVE values which were greater than any of the inter factor correlation. The discriminant validity for all the constructs ranged from 0.796 to 0.910 and correlation between exogenous constructs did not exceed 0.85 which indicated that the discriminant validity was achieved.

Table 7 shows the Regression Path Coefficients of MARDI's entrepreneurs' satisfaction and intention to use MARDI's services while *Table 8* shows the results of the hypothesis of the study by using

Table 7. Regression Path Coefficients of MARDI's entrepreneurs' satisfaction and intention to use MARDI's services SEM method

Construct		Construct	β	S.E	C.R	P	Results
Satisfaction	<--	Tangible	0.065	0.045	0.999	0.318	NS
Satisfaction	<--	Reliability	0.496	0.088	3.919	0.001***	Significant
Satisfaction	<--	Responsiveness	0.523	0.044	4.833	0.001***	Significant
Satisfaction	<--	Assurance	0.213	0.045	3.114	0.002**	Significant
Satisfaction	<--	Empathy	0.055	0.048	0.797	0.425	NS
Satisfaction	<--	Technology	0.654	0.065	5.485	0.001***	Significant
Intention	<--	Satisfaction	0.600	0.149	5.928	0.001***	Significant

Note: *** Significant at 0.001 level
** Significant at 0.01 level
* Significant at 0.05 level
NS Not significant
Source: Field survey (2017)

Table 8. Hypotheses of the study on MARDI's entrepreneur's satisfaction and intention to use MARDI's services by using SEM

	Hypothesis statement	Decision of H_o
H_1	Tangibility has a significant effect on entrepreneur's satisfaction	Fail to Reject H_o
H_2	Reliability has a significant effect on entrepreneur's satisfaction	Reject H_o
H_3	Responsiveness has a significant effect on entrepreneur's satisfaction	Reject H_o
H_4	Assurance has a significant effect on entrepreneur's satisfaction	Reject H_o
H_5	Empathy has a significant effect on entrepreneur's satisfaction	Fail to Reject H_o
H_6	Technology has a significant effect on entrepreneur's satisfaction	Reject H_o
H_7	Satisfaction has a significant effect on entrepreneur's intention	Reject H_o

Source: Field survey (2017)

SEM. The hypothesised research model exhibited good fit with observed data as mentioned earlier. The path estimates in the structural model and variance explained in each dependent variable were significant. There were about four hypothesised paths supported at p <0.001, one hypothesised path supported at p <0.01, while the other two hypothesised paths were not supported. H_1 proposed that a tangibility is not significantly related to satisfaction (β: 0.045, t: 0.999). As such, H_1 was not supported while the results for reliability and responsiveness showed that the magnitude of the relationship with satisfaction was significant for both variables [(β: 0.496, t: 3.919) and (β: 0.523, t: 4.833) respectively]. This indicated that H2 and H3 were supported.

The relationship between empathy with the satisfaction showed that they were not significant (β: 0.055, t: 0.797). If the regression weights are considered, it meant that H_5 was not supported. The relationship between assurance and technology to satisfaction were significant [(β: 0.213, t: 3.114) and (β: 0.654, t: 5.485) respectively]. Thus H_4 and H_6 were supported. There was a similar occurrence in the relationship between satisfaction and intention of MARDI's entrepreneurs' where the magnitude of the relationship between satisfaction to intention was strongly supported by a significant relationship [(β: 0.600, t: 5.928)]. As such H_7 was supported.

The standardised regression weights of the output and results of the hypotheses tests provided support for hypotheses

H_2, H_3, H_4, H_6 and H_7. This study also showed that technology still has an impact in determining entrepreneur's satisfaction while getting services at MARDI. Although technology is not a major factor in determining entrepreneur's satisfaction, but emphasis should still be taken to ensure that technology produced is of a high quality and can meet the needs of entrepreneurs.

Recommendations and conclusions

The present study investigated how service quality influenced customers satisfaction and how customers defined quality. The results of the study can be recommended to MARDI in order to improve its strategies. It not only gives information for MARDI's possible operations, but it showed a perfect example of service quality from the MARDI entrepreneur's point of view. The purpose of the study was to measure satisfaction in utilising advisory and consultancy services among entrepreneurs under MARDI's guidance (MARDI's entrepreneurs) and determine the effect on their intention to continuously use services rendered by MARDI. Six service quality dimensions, namely, tangibility, reliability, responsiveness, assurance, empathy and technology have been identified as being perceived by both satisfied and unsatisfied MARDI's entrepreneurs and it included technologies as one of the dimensions to investigate the impact on entrepreneur's development and satisfaction regarding the adopted technologies.

Tangibility and empathy seem to have no significant effect on satisfaction. MARDI's entrepreneurs agreed that reliability, responsiveness, assurance and technology gave a significant effect on MARDI's entrepreneur's satisfaction. This survey has shown that MARDI's entrepreneurs are not satisfied with the appearance of physical facilities, equipment, personnel and communication materials while getting services at MARDI such as when attending courses or workshops organised by MARDI. Similarly, empathy did not give a significant effect on their satisfaction. The survey found that MARDI's entrepreneurs were not taken care of well and did not get individualised attention from MARDI during advisory and consultation services.

Technology is one of the key factors in determining the satisfaction of MARDI's entrepreneurs. There are many technologies that scientists in MARDI innovated in their respective expertise. These technologies can meet MARDI's entrepreneurs needs and help in developing their businesses. This study also showed MARDI's entrepreneurs' intentions in using MARDI's services. MARDI's entrepreneurs can use MARDI's services either continuously or for only several times before seeking other services. Communication is necessary to ensure that MARDI's entrepreneurs continuously use MARDI's services and also to know the current problems faced by entrepreneurs. Feedback from entrepreneurs also needs to be improved to know the existing deficiencies in MARDI.

Through this study, the government needs to take several approaches to assist the SMEs and to ensure that they can continue to expand its economy. Various latest technologies are needed to make the SMEs competitive. However, old technologies still exist due to lack of funds to conduct research on new technologies. Reasonable allocations should be given primarily to R&D institutions to facilitate innovations as well as to develop new technologies.

MARDI's innovative technologies need to be improved in accordance with the current era and entrepreneurs' needs. Technology pull needs to be enhanced in comparison to technology push so that none of the technologies are discarded without transfer to target groups. This will increase MARDI's entrepreneur's confidence in MARDI's soft technologies which will in turn increase MARDI's reputation as an R&D institution. With the latest technologies and satisfying the needs of entrepreneurs,

the SMEs will continue to grow and be competitive with larger companies.

There are entrepreneurs who still do not recognise MARDI and MARDI's function in helping entrepreneurs. Intervention from the government is needed for MARDI to highlight these functions involving the support of MARDI's activities and entrepreneurship events. It is important for outsiders to realise that MARDI is not just a farm. This will also help improve MARDI's performance and reputation as an R&D institution in agriculture and entrepreneurship. A sufficient number of staff is needed to ensure that all planning and tasks are carried out efficiently. Therefore, for the recruitment of new staff, the government, like the Public Service Department (JPA), needs to open the quota to enable new posts to be opened. This will help MARDI's efforts in staffing constrains to carry out the necessary activities and tasks, especially at the state level. Although MARDI can hire staff on a contract basis, it cannot guarantee that these staff will work in MARDI for long periods.

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Abstrak

MARDI adalah salah satu agensi di bawah Kementerian Pertanian dan Industri Asas Tani yang terlibat dalam memberikan perkhidmatan kepada usahawan MARDI. Perkhidmatan yang diberikan kepada usahawan MARDI adalah dalam bentuk teknologi lembut seperti khidmat nasihat dan konsultasi. Kajian ini adalah untuk mengukur kepuasan dan niat dalam menggunakan khidmat nasihat dan perundingan mengenai teknologi yang lembut di kalangan usahawan di bawah bimbingan MARDI. Model SERVQUAL digunakan dalam kajian ini dengan enam dimensi untuk mengukur kepuasan usahawan MARDI. Oleh kerana teras perniagaan MARDI adalah R&D dan menginovasi teknologi baru, teknologi perlu disebut sebagai salah satu dimensi tersebut. Analisis Faktor Pengesahan (CFA) menunjukkan bahawa pemboleh ubah yang digunakan adalah sesuai dengan model kualiti perkhidmatan dan signifikan pada 0.001. Model Persamaan Struktur (SEM) digunakan untuk menganalisis hubungan di antara pembolehubah yang digunakan terutama di kalangan dimensi SERVQUAL dan kepuasan. Daripada model persamaan struktur, hanya empat dimensi SERVQUAL yang signifikan secara statistik; Kebolehpercayaan, Responsif, Jaminan and Teknologi, sedangkan dua dimensi lain iaitu Nyata dan Empati adalah tidak signifikan. Kepuasan sangat disokong oleh hubungan yang signifikan dengan Niat. Kajian menunjukkan bahawa kualiti perkhidmatan bertindak sebagai peramal penting kepuasan pelanggan. Kualiti perkhidmatan kemudian memberikan impak kepada niat usahawan MARDI untuk terus menggunakan perkhidmatan yang diberikan oleh MARDI. Kajian ini dapat membantu menambah baik piagam pelanggan MARDI untuk dijadikan sebagai panduan bagi menyampaikan mesej dan perkhidmatan yang tepat kepada usahawan MARDI. Walaupun teknologi bukan peramal yang paling kuat untuk kepuasan, ia memberikan kesan yang signifikan kepada kepuasan. Dengan itu, perkembangan teknologi perlu diambil kira dalam memastikan teknologi MARDI mampu memenuhi keperluan usahawan dengan menekankan permintaan menentang menolak permintaan.