

Determinants towards Food Delivery Service through E-Commerce in

Pasir Gudang Area

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Abstract: The implementation of e-commerce is now spreading rapidly in Malaysia. It is not just the buying and selling activity, but it also takes into account customer service, providing integrated business environment and offering value-added services. In addition, most individuals nowadays are very concerned about how to get the food easily. Some of them have made the choice to order food via delivery service. A study was conducted to investigate the determinant towards food delivery service through e-commerce in Pasir Gudang area. Data which was gathered through questionnaires was analyzed by using statistical package for social science (SPSS) software 20.0. It was done among 166 respondents around Pasir Gudang area which consists of people who work in the public and private sector or are self-employed. The results showed that the level of demand towards food delivery service in Pasir Gudang is high due to convenience reason as it can provide front-door service and make an order through phone or online.Further, regression analysis indicate that service quality, food quality and price have positive influence towards delivery service. After all the mediation tests had been conducted, it has been proved that e-commerce is a mediator and it is necessary to enriched more on service quality as the most determinant towards food delivery service. For future implication, e-commerce will be a platform for the prospect entrepreneur to starting their business of food delivery service which link between retailer (local stores or restaurant) and the customers.

Key words: food delivery service, e-commerce

1. Introduction

Over the past few decades, the Internet has developed into a massive global market place for the exchange of goods and services. In many developed countries, the Internet has been adopted as an important medium, offering a wide variety of products with twenty four hour availability and wide area coverage. E-commerce has expanded rapidly as retailers and other marketers of consumer packaged goods offer consumers the ability to shop online.

From year 1999 to 2003, the consumer food service market in Malaysia increased by about 16 per cent (16%), amounting to 20,235 units. During the same period, the performance of the transaction and the consumer food

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service market increased to 22 percent (22%) and 39 percent (39%), which is the present value amounting to RM 1,026 million and RM 16,312 million. The food home delivery or take-away has also increased by 60 per cent (60%) of the unit from 1999 to 2003 due to increased work schedule is quite compact among Malaysians (Lee, 2006)

However, the food industry has been the slowest major consumer sector to expand into e-commerce growth, due to issues such as freshness, product damage, low margins compared to other consumer products and logistical challenges. Therefore, based on the increasing population and industrial areas as well as the rapidly expanding trade around Pasir Gudang, a study was carried out to identify determinants which contribute towards food delivery service through e-Commerce.

1.1 Objective of the Study

The objective of the present study were:

- To determine the level of demand towards food delivery service.
- To identify the determinant which contribute towards food delivery service.

2. Literature Review

E-commerce or Electronic Business has a broader definition. It is not just buying and selling but also servicing customers, providing an integrated business environment and offering added value services. (Turban et al., 1999).Today there are many companies that have implemented the use of e-commerce as an effective business alternative in the market increases. Sources from (Nielsen, 2014) stated that global online purchase intention rates in 2014 have doubled since 2011 for event tickets (41%), electronic books (34%), sporting goods (31%), toys/dolls (29%), videos/DVD's/games (28%), music (27%), flowers (18%) and cars/accessories (17%). In summary e-commerce covers six major business sectors of advertising, educational, financial, professional, retailing and tourism. According to (Omar & Anas, 2014) stated that in Malaysia, the e-Commerce is still considered as a new medium. The community still prefer to conduct transactions directly and transact face-to-face without the use of ICT technologies such as the internet. However, based on Business Times (2015), Malaysia has emerged as one of the largest e-commerce markets in Southeast Asia alongside Singapore and Indonesia. Further, according to eBay Inc's report, eBay commercial sellers in Malaysia have generated more than US\$10,000 (RM36, 273) in 2014, with Selangor being the highest, followed by Kuala Lumpur, Penang, Johor and Perak.

Based on Restaurant Association survey in year 2008, 57 percent of people being surveyed said that they would use delivery services to their homes or offices if more restaurants offered it. A lunch box delivery service can be profitable if it has a good location near large office districts. Lunch box is easy to assemble and deliver (Cequea, 2010). This means that most of the customers are more interested in the concept of prepared-meal delivery. Because it is very easy and quick to be found than buying food at the restaurant. It also has a reasonable price as the entrepreneurs can provide food to customers at a very low cost, through economies of scale in purchasing and preparing food.

Sarah Pierce (2008) stated many small business owners around United States have found an edge by offering freshly prepared meals that are delivered locally. There are three current trends in food delivery services that keep the entrepreneurs satisfied. One of the trend is the entrepreneur creates a new box of prepared organic, raw meals that look as delicious as cooked meals. Another trend of food delivery service is lunches delivered to a child's school which only uses organic fruits and veggies, hormone and antibiotic free meat, and also meals that are low

in fat, sugar and salt. However, there are other entrepreneurs that implement green business by using local vendors to deliver weekly meals in reusable glassware and containers to reduce waste. Furthermore, Lucinda Duncalfe, a woman entrepreneur from Philadelphia proved that by launching a meal delivery service, it provided a valuable experience in logistics and supply chain technology, besides changing the nature of her business from B2B (Business-to-Business) to B2C (Business-to-Consumer) market (David Port, 2013). Online trade and communication offer entrepreneurs with an advantage by allowing them to gain more information from both, the market and the consumer. For entrepreneurs who have been in the food delivery service industry, making e-Commerce as an ideal choice for today's business is essential and it can complement the existing restaurant. It also can change future needs by reducing physical space requirements in some cases for example in prioritizing logistics (Cushman & Wakefield, 2013).

Food is a basic need for all human beings. Although the flow of food preparation is developing in line with technology advances, even the economic cycle is improving, people still need food to survive each day. According to (Lee, 2006), many Malaysians prefer to dine in the restaurant or buy from food stall more often nowadays. This phenomenon could raise new opportunities for the development of the industry "food away from home (FAFH)" to grow more rapidly. Meanwhile, Malaysian women's participation rate in the workforce is also increasing, from 52.4 percent (52.4%) in 2013 to 53.6 percent (53.6%) in 2014. (Labor Force Survey Report, Malaysia, 2014). With this growth, it can be said that the level of demand for food delivery service will increase among women and households because of the limited time to cook at home, especially in the afternoon.

3. Research Framework

In this study, the researchers are looking on the significance of e-commerce mediator role towards all the independent and dependent variable. Mediator variable explains the relationship between independent and dependent variable (Mackinnon, 2008). In other words, mediating relationships occur when a third variable plays an important role in governing the relationship between the other two variables. A research framework had been developed. This model assumes that three independent variables; (1) service quality, (2) food quality and (3) price, had causes role of e-Commerce as a mediator variable, which in turn, e-Commerce will cause delivery service as the dependent variable. Then, e-Commerce will serve to clarify the nature of the relationship between the independent and dependent variables.

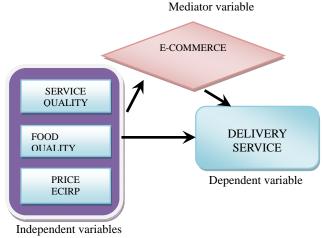


Figure 1 The Link between Dimensions

3.1 E-Commerce as a Mediator

Meeting customer expectations is more complicated than ever before, for example on-the-go mobile shopping habits make consumers' behavior unpredictable, while product variety and delivery options increase. According to (PLS Logistics, 2015) sources, same-day delivery trend had being demanded as well. There are e-commerce providers such as Amazon, Google, and Uber who are aware of their role as a mediator between local stores or restaurants and their customers. This development is being accelerated by the unprecedented growth in the digital economy. The traditional outlet-based model driven by suppliers nowadays will be replaced by a demand-driven model, where the customer takes well informed decisions (Walter Trezek, 2016).

3.2 Service Quality

SERVQUAL had been developed by (Parasuraman, Zeithaml & Berry, 1988), a method to assess customer satisfaction for service industries, which started a research on service quality measurement. The measurement involved the difference between customer perceptions and expectations based on five (5) generic dimensions: tangibles, reliability, responsiveness, assurance and empathy. In a logistical and supply chain context, the customer's expectations are particularly complex. Different personnel may have different levels of expectation for the criteria of performance. For example, some personnel may be most concerned with responsiveness and rapid handling for an inquiry regarding order status, while others may be more concerned with order completeness or meeting a delivery appointment (J. Bowersox et al., 2013).

3.3 Food Quality

Sources from (Boli, 2012) stated that food quality is the quality characteristics of food that is acceptable to consumers. This includes external factors as appearance (size, shape, colour, gloss, and consistency), texture and flavor; factors such as grade standards (e.g., of eggs) and internal (chemical, physical, microbial). It deals with product traceability, e.g., of ingredient and packaging suppliers, should a recall of the product be required. It also deals with labeling issues to ensure there is correct ingredient and nutritional information. Although food can be argued to not be part of service quality, the focuses on its characteristics such as fresh, healthy, well presented and cooked which are influential factors for the customers to be satisfied and make their decisions to purchase again. In line with this observation, according to Kotler (1991), service also means an intangible activity or benefit provided by the services provider to customer, which can be a tangible product and something that is added to intangible service, or in an independent form.

3.4 Price

Price is playing a vital role because the charges of the product directly affect the customer. So if it is affordable, then customers satisfy it and willing to purchase the product again and again in future (Gustafsson et al., 2005). Price fairness is lead to the customer satisfaction because price is the element which directly customers are paying for particular product which they gain against the price. The price of the items on the menu can also greatly influence customers because price has the capability of attracting or repelling them (Monroe, 1989), especially since price functions as an indicator of quality (Lewis & Shoemaker, 1997). The pricing of food items also varies. If the price is high, customers are likely to expect high quality, but if the price is low, customers may question the ability to deliver product and service quality.

4. Hypotheses

Based on the study, the following hypotheses are proposed:

- $H1_{\rm \AA}$ Service quality has positive influence towards delivery service.
- $H2_{A}$ Food quality has positive influence towards delivery service.
- $H3_{A}$ Price has positive influence towards delivery service.

5. Research Methodology

5.1 Research Design

This study was conducted to identify factors towards food delivery service and to examine the role of e-commerce as a mediator. The design of this study is quantitative. Meanwhile, the research consisted 166 respondents and being selected using purposive sampling method. This is because the researcher was concentrate on respondents who are working in government sector, private sector and self-employed in Pasir Gudang area. In addition, online journals, news, articles and statistics also help in contributing information regarding the research.

The questionnaire asked respondents included six-point Likert Scales as researcher prefer respondents to commit either positive or negative end of the scale. The range was structured at numeral 1 with the verbal statement "strongly disagree" and at the numeral 6 with the verbal statement "strongly agree". To construct the questionnaire in this study, it will be not necessary to apply the five (5) dimensions of SERVQUAL (Andaleeb & Conway, 2006). The questionnaire focused on selected measures in SERVQUAL framework (reliable, responsive and tangible) for service and food quality, which also helped to keep the instrument and the analyses simple.

6. Results and Discussions

6.1 Data Analysis

Reliability test has been performed. For overall performance, reliability values for all items are 0.968 and the scale are satisfactory reliable for subsequent analysis (Sekaran, 2003). Frequency distribution was conducted to determine the level of demand towards food delivery service in Pasir Gudang area. It shows that 91% of respondents indicated food delivery service are needed because of convenience is the main reason as it can provide front-door service and make an order through phone or online. All items are evaluated based on a 6-point scale. From the Table 1, service quality contribute mean value of 5.27, while food quality and price have mean value of 5.24 and 5.15 respectively. In sum, the level of delivery service can be assumed as highly being needed and service quality is the most determinant that contribute towards food delivery service through E-Commerce in Pasir Gudang area.

Variables	Mean	Standard Deviation
Service quality	5.27	1.042
Food quality	5.24	1.052
Price	5.15	1.055
Delivery Service	5.34	1.014
E-commerce	5.32	1.008

Table 1Descriptive Analysis

A correlation test is conducted to determine whether there is a relationship between service quality, food quality and price with delivery service. Further, it also will indicate whether the relationship is in a weak, moderate or strong. Based on correlation value in Table 2 below, indicate that there is strong relationship between independent variables and dependent variable. It is also significant at p = 0.01.

		Delivery Service	Service Quality	Food Quality	Price
	Pears on Correlation	1	719	675	684
Delivery Service	Sig.(2-tailed)		000	000	000
	Ν	166	166	166	166
	Pears on Correlation	719	1	746	621
Service Quality	Sig.(2-tailed)	000		000	000
	Ν	166	166	166	166
	Pears on Correlation	675	746	1	657
Food Quality	Sig.(2-tailed)	000	000		000
	Ν	166	166	166	166
Price	Pears on Correlation	684	621	657	1
	Sig.(2-tailed)	000	000	000	
	Ν	166	166	166	166

Table 2Correlation Analysis

**. Correlation is signification at the 0.01 level(2-tailed).

Multiple Regression Analysis is conducted to determine the hypotheses and mediation testing between all variables. The results from Table 3revealed that the 3 independent variables i.e. service quality, food quality and price can account for 61.9% of delivery service with (R2: 0.619, P < 0.01 and F-ratio: 87.892). Further, it could be said that about 62% of delivery service has been influenced by all the three independent variables. Among three independent variables in column coefficient, the highest number in the beta is 0.387 for service quality, while food quality and price have 0.317 and 0.333 accordingly which is significant at the 0.001 level. Thus, we accept the alternate hypotheses as all the beta values of three independent variables has positive influence towards delivery service.

Table 3 Multiple Regression Analysis Table: Between Service Quality, Food Quality, Price and Delivery Service

	Regression							
		N = 166						
	Coeffi	cients	t	Sig	R^2	Adjusted	F-stat	Sig
Variables	В	Std. Error	t	Sig	ĸ	\mathbb{R}^2	r-stat	Sig.
Service Quality	0.387	0.083	5.132	0.000				
Food Quality	0.317	0.067	4.933	0.000	0.619	0.612	87.892	$.000^{b}$
Price	0.333	0.073	5.007	0.000				

a. Predictors: (Constant), Service Quality, Food Quality , Price.

b. Dependent Variable: Delivery Service

6.2 Mediation Testing

In this research, mediation testing is conducted based on three steps from (Baron & Kenny, 1986). This is to prove whether e-Commerce is a mediator variable and could explain the relation between independent and dependent variables.

First Step: Regress the Dependent Variable on Independent Variables.

As per results from Table 3, all the independent variables is a significant predictor of the dependent variable. In addition, the new regression model has been generated as follows:

Equation 1:

 $DS = \alpha + 0.387S + 0.317F + 0.333P + \varepsilon_{it...}$

(0.083)** (0.067) ** (0.073) **

**. Correlation is significant at the 0.01 level (2-tailed)

The result indicates service quality is the most significant factor that will increase by beta value of (0.387). It could be explained that when the level of customer demand towards delivery service increase by 1%, the service quality should be increase by 38.7%. Customer demands towards service quality such as delivery on time, accurate delivery order that has been made, quick response from the seller if the order cannot be delivered will increase the effectiveness of delivery service.

Second Step: Regress the Mediator Variable on Independent Variables.

Table 4 Mult	ple Regression Analys	is Table: Between Service	Quality, Food Quality	, Price and E-Commerce
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	Regression							
		N = 166						
	Coeffi	cients	t	Sig	\mathbb{R}^2	Adjusted	F-stat	Sig
Variables	В	Std. Error	t	Sig	K	R2	r-stat	Sig.
Service Quality	0.307	0.085	3.402	0.001				
Food Quality	0.207	0.089	3.155	0.001	0.455	0.445	45.074	$.000^{b}$
Price	0.345	0.074	4.322	0.000				

a. Predictors: (Constant), Service Quality, Food Quality, Price.

b. Dependent Variable: E-Commerce.

For the second test, the result from Table 4 above revealed that all independent variables are significant at 1% and 46% of the variance mediating role of e-commerce has influenced by all the independent variables (R^2 : 0.455, P < 0.01 and F-ratio: 45.074). This can be explained that when level of customer demand towards e-Commerce as a mediator increased by 1%, the performance of all determinants will slightly increase up to 46%. Further, the new regression model has been generated as follows:

Equation 2:

 $EC = \alpha + 0.307S + 0.207F + 0.345P + \varepsilon_{it...}$ $(0.085)^{**} (0.089)^{**} (0.074)^{**}$

**. Correlation is significant at the 0.01 level (2-tailed)

Based on the result, we can conclude that price is the most determinant factor that increase significantly on beta value of (0.345) towards mediating role of e-commerce. Researcher analyzed that when level of customer demand towards e-Commerce as a mediator rise up at 1%, it also will influence the price increased by 34.5%. In this research, researcher indicate that the price is starting from the supplier costs (local stores or restaurants) until

to the customers (logistics and delivery costs). If the price is high, customers are likely to expect high quality, but if the price is low, customers may question the ability to deliver product and service quality.

Third Step: Regress the Dependent Variable on Both the Mediator and Independent Variables.

		1110	, E-commerc		y service			
	Regression							
		N = 166						
	Coeffi	cients	t	Sia	R^2	Adjusted	F-stat	Sig
Variables	В	Std. Error	t Sig	ĸ	R2	r-stat	Sig.	
Service Quality	0.327	0.075	4.294	0.000				
Food Quality	0.246	0.086	3.802	0.000	0.640	.40 0.631	71.685	.000 ^b
Price	0.266	0.084	3.876	0.000				
E-Commerce	0.316	0.074	4.165	0.000				

Table 5	Multiple Regression Analysis Table: Between Service Quality, Food Quality,
	Price F-commerce and Delivery Service

a. Predictors: (Constant), Service Quality, Food Quality, Price, E-commerce.

b. Dependent Variable: Delivery Service

By regress the dependent variable on both the mediator and independent variable, finding from Table 5 revealed that all variables are significant at 1% and about 64% of delivery service has been influenced by all the variables i.e. service quality, food quality, price and e-Commerce with (R^2 : 0.640, P < 0.01 and F-ratio: 71.685). It also can be determined that e-commerce as a mediator is a significant predictor of the dependent variable (delivery service), while controlling the independent variable (service quality, food quality and price). Therefore, the new regression model has been generated as follows:

Equation 3:

 $DS = \alpha + 0.327S + 0.246F + 0.266P + 0.316EC + \varepsilon_{it...}$

(0.075)** (0.086) ** (0.084) ** (0.074) **

**. Correlation is significant at the 0.01 level (2-tailed)

The result shows that when level of customer demand to purchase food through e-Commerce increase by 1%, the expectation towards level of service quality need to rise up until 32.7% and will cause towards demand of delivery service increase by 31.6%. It indicate that customer will demand the effective delivery service in terms of service quality when they use e-Commerce as a platform to make a purchase.

7. Conclusions and Discussions

The importance of this research is to provide information to entrepreneur who are interested in doing business of food delivery service through e-commerce in Pasir Gudang area. Researcher indicate that level of demand towards food delivery service in Pasir Gudang is high because of convenience reason as it can provide front-door service and make an order through phone or online. Further, when the mediation tests how that e-Commerce as a mediator, it will be a platform for the prospect entrepreneur to starting their business of food delivery service which link between retailer (local stores or restaurant)and the customers. Meanwhile, service quality will be the most determinant towards food delivery service rather than food quality and price. In this context, researcher determined that different customers may have different levels of expectation for the service quality. Some of customers might concerned with customer service such as responsiveness and rapid handling for

an inquiry regarding order status. Meanwhile, others may be more concerned with logistics process like order completeness or meeting a delivery appointment. From the result, it can be visualized that there will be prospect customers, who will use the delivery service by placing order using e-commerce to buy food and expecting service quality from the seller, such as food will be delivered on time, they can get the exact order that has been made, can make a quick and safe payment through online and etc. However, the seller could face numerous obstacles such as last-mile capacity, customer support, inventory fulfillment and special logistics software. When moving small orders over short distances at high speed, all supply chain processes must be as efficient as possible. Furthermore, there are several limitations exist in this research. First, the research framework derives from existing literature but not qualitative fieldwork. Second, this research focuses more towards mediating role of e-Commerce rather to reveal more about issues that highlighted in the determinants. Therefore, it may be possible to provide deeper insight on future research at those aspects. Overall, it can be concluded that the effectiveness of e-Commerce is very important as it had been proved that it is a mediator between determinants and delivery service. Therefore, it is necessary for entrepreneur to provide good service quality and serve the market needs.

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