



UNIVERSITI PUTRA MALAYSIA

**THE MEDIATING ROLE OF PERCEIVED RISK IN THE RELATIONSHIP
BETWEEN RESTAURANT FOOD HYGIENE QUALITY AND CONSUMER
PURCHASE INTENTION**

UNGKU FATIMAH UNGKU ZAINAL ABIDIN

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By

UNGKU FATIMAH UNGKU ZAINAL ABIDIN

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
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Master of Science**

December 2007



Dedicating the success of this study to my beloved husband and family.

This success is also dedicated in memory of my late beloved father Ungku Zainal Abidin (1955-2005), he'll always be remembered and missed by everyone who ever knew him—most of all by me.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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Chairman: Boo Huey Chern, PhD

Faculty: Food Science and Technology

As the concern for food safety increases among consumers today, the foodservice industry inevitably has to strive to meet the required food hygiene quality. Previous literatures have widely suggested the significant role of food safety in consumer purchase intention. Yet, theoretical model in understanding how food hygiene influences consumer behavioral intention in purchasing food away from home is lacking. Drawing from the theory of perceived risk, this study empirically examined the mediating effect of perceived risk on the relationship between food hygiene standard of an eating establishment and consumer purchase intention.

A survey was conducted on two types of foodservice establishments (i.e. quick service restaurant, QSR and full service restaurant, FSR). A total of 525 adult respondents (260 from QSR and 265 from FSR) were selected following a systematic random purposive sampling procedure. Exploratory factor analysis revealed three underlying factors of food hygiene (i.e. preparation and serving

process, staff and handling practices, and food) from consumers' point of view. A model incorporating the three factors was developed using structural equation modeling.

The assessment of the overall structural model for FSR and QSR indicated that the effect of food hygiene on consumer perceived risk and purchase intention differed between the two types of foodservice establishments. Results showed that the effect of food hygiene factors on consumer purchase intention differs between FSR and QSR. It is suggested that the menu price paid to dine in an establishment may influence the impact of food hygiene on purchase intention. Consumers are more tolerant and would not expect everything of high standard of hygiene if they were to pay less. On the contrary, consumers anticipate high standard of food hygiene with the relatively high menu price paid. In addition, results showed that the food hygiene factors influence consumer perceived risk in FSR and QSR differently. The perceived risk is expected to be affected by the invisibility of food hygiene factors. Consumers tend to be optimistic about the potential risk when food hygiene is not apparent to them.

Finally, this study demonstrated that perceived risk is only a partial mediator. From consumers' point of view food hygiene need not be associated with food safety matters. Consumers are unable to differentiate food hygiene as food safety related factors from those that reflect only aesthetics value. Moreover, consumers may not have the right judgment regarding the risk associated with food hygiene.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PERANAN PERSEPSI RISIKO SEBAGAI MEDIATOR DI DALAM
HUBUNGAN ANTARA KUALITI KEBERSIHAN MAKANAN
RESTORAN DAN KEINGINAN MEMBELI PENGGUNA**

Oleh

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Memandangkan pengguna hari ini mementingkan keselamatan makanan, industri perkhidmatan makanan tidak dapat diketepikan daripada memenuhi kualiti kebersihan makanan yang dikehendaki pengguna. Kajian terdahulu telah menunjukkan secara meluas peranan keselamatan makanan yang signifikan dalam keinginan pembelian pengguna. Sehingga kini, model teoritikal bagi memahami bagaimana kebersihan makanan mempengaruhi keinginan pengguna membeli makanan di luar masih kekurangan. Berasaskan teori persepsi risiko, kajian ini memeriksa secara empirik kesan mediator persepsi risiko ke atas hubungan antara tahap kebersihan makanan dan keinginan pembelian pengguna.

Soal selidik dijalankan di dua jenis premis perkhidmatan makanan iaitu restoran makanan segera (QSR), dan restoran perkhidmatan penuh (FSR). Sejumlah 525 orang responden dewasa (260 dari QSR dan 265 dari FSR) telah dipilih mengikut prosedur persampelan rawak sistematik. Analisis faktor eksplorasi menunjukkan

terdapat tiga faktor kebersihan makanan iaitu proses penyediaan dan penyajian makanan, staf dan amalan kebersihan serta makanan dari segi pandangan pengguna. Satu model yang mengandungi ketiga-tiga faktor kebersihan makanan tersebut telah dibangunkan dengan menggunakan pemodelan persamaan berstruktur.

Penilaian ke atas keseluruhan struktur model bagi QSR dan FSR mendapati bahawa kesan kebersihan makanan ke atas persepsi risiko dan keinginan pembelian pengguna adalah berbeza bagi kedua-dua jenis premis perkhidmatan makanan. Keputusan kajian menunjukkan bahawa kesan kebersihan makanan ke atas keinginan pembelian pengguna adalah berbeza di antara FSR dan QSR. Harga menu yang perlu dibayar oleh pengguna dicadangkan telah mempengaruhi impak kebersihan makanan ke atas keinginan pembelian pengguna. Pengguna lebih bertoleransi dan tidak mengharapkan tahap kebersihan makanan yang tinggi sekiranya harga menu adalah rendah. Sebaliknya, pengguna akan menjangkakan tahap kebersihan makanan yang tinggi jika harga menu adalah tinggi. Tambahan lagi, faktor kebersihan makanan mempengaruhi persepsi risiko pengguna secara berbeza antara FSR dan QSR. Kesan ke atas persepsi risiko dijangka bergantung kepada keketaraan sesuatu faktor kebersihan makanan itu untuk dinilai. Pengguna cenderung untuk bersikap optimis terhadap potensi risiko apabila kebersihan makanan tidak ketara.

Akhir sekali, kajian ini mendemonstrasikan bahawa persepsi risiko merupakan mediator separa. Dari segi pandangan pengguna, kebersihan makanan tidak semestinya melibatkan aspek keselamatan makanan. Pengguna gagal

membezakan antara faktor yang berkait dengan keselamatan makanan daripada faktor yang hanya mempamerkan nilai estetika. Malahan, pengguna berkemungkinan tidak membuat penilaian yang tepat terhadap risiko yang berkaitan dengan kebersihan makanan.

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I certify that an Examination Committee has met on date of viva voce to conduct the final examination of Ungku Fatimah Binti Ungku Zainal Abidin on her Master of Science thesis entitled “Effect of food hygiene quality on consumer perceived risk and intention to purchase food away from home” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the student be awarded the (Master of Science Degree).

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any institution

UNGKU FATIMAH BINTI UNGKU ZAINAL ABIDIN

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CHAPTER 1

INTRODUCTION

1.1 Background

Food safety is important in today's food industry, particularly in the foodservice sector, as consumers have become increasingly concerned about the risk related to food. More people are concerned about safety of food than they are about fat or sodium content of food (Boo, Ghiselli, & Almanza, 2000; Dulen, 1998). Specifically, food hygiene is the major food safety concern when consumers dine out. Several findings have reported that consumers commonly give negative perception toward the safety of food served at restaurant due to their concern about the level of food hygiene practices (Adkins, 2004; Banotai, 2003; Dulen, 1998; Food Standard Agency, 2002; Perlik, 2002). Nonetheless, consumers' food safety perceptions towards restaurant industry are inconsistent with their purchase behavior. On one hand, consumer indicated low confidence with the safety of restaurant food; on the other hand their consumption of outside meal continues to grow. The significance of food safety in consumer's purchase decision when eating away from home is rather equivocal.

Consumers generally perceived that the level of food safety in foodservice practices is lower compared to domestic preparation (Brewer et al., 1994; Dulen, 1998; Fein et al., 1995). Williamson, Gravani, and Lawless (1992) reported 33 percent of respondents in their study indicated that food safety problem were most likely the result of unsafe practices at restaurants. Green, Selman, Scallan, Jones, and Marcus (2005), in a telephone survey of 16,435 randomly selected US



adults, found that younger respondents, who have college education and eat out more frequently were likely to attribute a suspected foodborne illness to an outside meal. Recently, a study comparing consumers' perception of food safety at restaurant and other food chain showed that the majority of consumers perceived restaurant performance, capability and commitment to food safety as significantly lower than that of farmers, food processors and manufacturers, grocery stores and supermarket (Knight, Worosz, & Todd, 2007).

Indeed, numerous studies have shown that the greatest number of foodborne illness arises from the foodservice industry (Cavalli & Salay, 2004; Clayton & Griffith, 2004; Cochran-Yantis, Belo, Giampaoli, McProud, Everly, & Gans, 1996; Morrison, Caffin, & Wallace, 1998; Sheppard, Kipps & Thompson, 1990). Foodservice establishment is the most frequently identified setting of foodborne illness. While researchers revealed that most managers and proprietors perceived low risk of foodborne illness contracted within their business (Clayton, Griffith, Price, & Peters, 2002; Coleman & Griffith, 1998; Coleman & Robert, 2005; Morrison, et al., 1998; Mortlock, Peters, & Griffith, 2000), evidence indicating the risk of foodborne illness is mounting (Bas, Ersun, & Kivanc, 2006; Finch & Daniel, 2005; Kramer & Scott, 2004; Motarjemi, Kaferstein, Miyagawa, & Mitagishima, 1996).

In Malaysia, food safety remains one of the major issues confronting the foodservice industry (Euromonitor, 2004). Despite various attempts made by the government through the National Food Safety Policy, food poisoning incidents continue to grow. Food poisoning incident per 100 000 population rose from

6.69% in 1990 to 38.04% in 1999 (Ministry of Health [MOH], 2001). The recently reported high food premise closure rate indicates that restaurant industry may be the culprit (Table 1). Restaurant recorded five time higher premise closure rate compared to other types of food premise.

Table 1. Premise closure rate due to unhygienic operation in 2003

Type of premise	Number of inspection	Number of closure	Closure rate (%)
Hawker	8146	92	1.13
Stall	23203	603	2.60
Restaurant	18673	1097	5.87
School canteen	4783	76	1.59
Food manufacturer	2684	31	1.15

(Source: MOH, 2003)

The commonly reported risk factors to foodborne illness are results of malpractices (Clayton, et al., 2002; Ehiri & Morris, 1996). Howes, McEwen, Griffith, and Harris (1996) pointed out that food handler's malpractices contributed to 97% of foodborne illness in foodservice establishment. The significant contribution of poor food hygiene practices to the occurrence of foodborne outbreaks has been widely supported by many previous studies (Cavalli & Salay, 2004; Linton, McSwane, & Woodley, 1998; Manning & Snider, 1993). According to Communicable Disease Center, most foodborne outbreaks in Malaysia were mainly caused by malpractices of food hygiene, such as unhygienic food preparation, poor environment sanitation, and prolong storage of prepared food at temperature ranging 5°C to 60°C (MOH, 2001).

In spite of low confidence towards food safety and mounting evidences on poor food hygiene practices in foodservice, consumers' expenditures on this sector continue to rise. In Malaysia, Euromonitor market survey reported that consumers eat out frequently. The expenditure in foodservice among Malaysian consumers has increased up to 49.5% between the year 2000 and 2005 (Euromonitor, 2007). Similarly in US, consumers' expenditure in foodservice is escalating. The restaurant industry accounts for a 47.5% share of the food dollar (National Restaurants Association, 2006). Moreover, Carlson et al. (2002) calculated that restaurants accounted for 14 percent of all US food consumption in grams. In other words, consumers reported food safety perception at restaurant seems to be conflicting with their purchase behavior. Nonetheless, this conflicting phenomenon remains unexplored.

Several empirical findings claimed that the standard of food hygiene is important when consumers decide where to eat (Henson et al, 2006, Worsfold, 2006a). Particularly, Henson et al. (2006) revealed that consumers predominantly use visible food hygiene cues in judging the level of food safety in eating establishment. The hygiene cues found in an eating establishment could influence consumer confidence with the safety of food served. Unsanitary kitchen condition, dirty dishes, poor workers hygiene and inadequate cooking time and temperature were cited as contributing factors to the risk of foodborne illness by consumers (Banotai, 2003; Boo et al. 2000; Dulen, 1998; Leach, Mercer, Stew, & Denver, 2001). Consumers with their subjective assessment view variety of food hygiene factors responsible for an outbreak.

The current study postulated that consumer purchase intention is affected by this subjective assessment of risk or perceived risk. Literature has suggested that consumer purchase decision is driven by their perception of risk (Yeung & Morris, 2001b). Consumers will avoid purchasing foods that are perceived as unsafe. The association between consumer risk perception and purchase behavior has been confirmed by the perceived risk theory in the context of consumer purchase behavioral intention. Many researchers have explored the role of perceived risk in mediating the relationship between food safety risk and purchase behavioral intention (Mohan & Cowan, 2004; Tsiros & Heilman, 2005; Yeung & Morris, 2001b). The role of perceived risk as mediator in explaining the impact of food hygiene quality on consumer purchase intention is seen relevant for the current study.

1.2 Problem Statement

The significance and rising importance of food consumption away from home has drawn the need to understand better the extent to which food safety and hygiene influences consumer purchase behavior. Although consumer perception of food safety at restaurant is lower than other food chain participants, previous study failed to show the significant impact of this perception on consumers' frequency of eating out (Andrew et al. 2007). Moreover, many of the prior studies that explored consumers' preferences for restaurants seldom highlighted the role of food safety and hygiene in consumers' restaurant choice (Auty, 1992; Clark & Wood, 1998; Gregory & Kim, 2004; Kara et al., 1997; Kivela, 1997; Koo, Tao & Yeung, 1999; Lewis, 1981; Olsen et al., 2000).

To date, only limited research has explored the effect of restaurant safety and hygiene standard on consumer purchase intention. Despite the significant role of perceived risk in determining consumer purchase decision as previously reported, limited study has tested the effect of consumer perceived risk in purchasing food at restaurant. On top of that, theoretical model in understanding how food safety influence consumer purchase intention in the context of eating out was not reported in literature. Hence, this research is an empirical endeavor to build a framework that provides a theoretical based knowledge in understanding the influence of restaurant food safety and hygiene quality on consumers' purchase intention.

1.3 Objectives of the Study

To fill the gap in literature, the current study aimed to develop a theoretical model that explores the relationship between consumers' perceived food hygiene standard, perceived risk and purchase intention. The specific objectives of this study are:

- (1) to identify food hygiene factors that influence consumers' perceived risk and purchase intention,
- (2) to examine the mediating effect of perceived risk in the relationship between food hygiene factors and consumer's purchase intention, and
- (3) to investigate the effect of types of eating establishment on the above relationship.