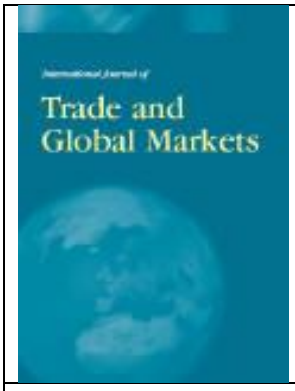

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266-279	**An empirical analysis of materials' cost effect in the Malaysian housing market industry using deterministic method: case of Klang Valley** Rajeeshwaran Moorthy **DOI**: 10.1504/IJTGM.2015.071608

A study on awareness of Islamic banking in India

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Abstract: Islamic banking is a system which is in consonance with the value system of Islam and is governed by the principles laid down by Islamic *Shariah* where interest-based transactions are prohibited. The potential for growth of Islamic finance is tremendous across the world and it is gradually flourishing in India as well. The present paper is an attempt to judge the awareness level of such system in India. Moreover, the study focuses on finding out the relationship between certain demographic factors and the level of awareness with respect to Islamic banking benefits and feasibility in India. The primary data have been collected and tested by using *t*-statistic. The result proves that many products and concepts of Islamic banking are not known to the respondents. Significant differences have been found between bankers and non-bankers as well as Muslims and non-Muslims regarding the benefits and feasibility of Islamic banking in India.

Keywords: Islamic banking; *Shariah*; *Riba*; banker; Muslim; India.

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1 Introduction

Islamic banking is also known as an interest-free banking system as the *Shariah* disallows the acceptance of '*Riba*' or interest rate for accepting and lending of money (Edwards, 1999; Iqbal and Mirakhor, 1987). Islamic banking can be considered banking with a conscience (Abdul Gafoor, 1995; Afzal, 1996; Al-Saud, 1985). Islamic banks each have a *Shariah* board made up of *Shariah* scholars as well as financial experts who are responsible for determining what activities are and are not *Shariah*-compliant. In the Islamic banking system, a business that offers good interest rates or services is strictly prohibited and it is in fact considered *Haraam* (forbidden). Islamic banking offers the same facilities as conventional banking system except that it strictly follows the rules of *Shariah* or *Fiqh al-Muamalat*. While these principles were used as the basis for a flourishing economy in earlier times, it is only in the late 20th century that a number of Islamic banks were formed to apply these principles to private or semi-private commercial institutions within the Muslim community (Ariff, 1988). One of the main selling points of Islamic banking is that, unlike conventional banking, it is concerned about the viability of the project and the profitability of the operation but not the size of the collateral. Islamic banking is steadily moving into an increasing number of conventional financial systems. It is expanding not only in nations with majority Muslim populations, but also in other countries where Muslims are a minority, such as UK or Japan. Similarly, countries like India, the Kyrgyz Republic and Syria have recently granted, or are considering granting, licences for Islamic banking activities. In fact, there are currently more than 300 Islamic financial institutions spread over 51 countries, plus well over 250 mutual funds that comply with Islamic principles. Over the last decade, this industry has experienced growth rates of 10–15% per annum, a trend that is expected to continue. The main objective is to implement and materialise the economic and financial principles of Islam in the banking arena. Such type of banking is again under question on whether it will effectively work in India or not, and how many knows about such type of banking and its products. All these questions have been very well answered by the present study. This paper tries to find out the level of awareness of such banking and its products in India, and whether its benefits and feasibility are looked at differently or not by different strata of people.

1.1 Islamic banking: India and worldwide

Islamic finance has grown at a pace of 15–20% annually for the last five years and banking has been an important part in that. There are approximately 300 Islamic banks throughout the world with an estimated asset of $270 billion. According to experts, in the face of globalisation, Islamic bank ranks among top three in their markets. The largest markets for Islamic finance are Saudi Arabia, USA and Turkey – this is considering Muslim population and per capita income (Proctor, 1997). The fastest growing markets are

Bahrain, Malaysia and Indonesia. The potential for growth of Islamic finance is tremendous with estimates suggesting that within eight to ten years, half of saving of world's 1.5 billion Muslims will be in Islamic banks. This means $905 billion assets in the Middle East alone. When considered Muslims living outside the Middle East, like in India and Indonesia, the assets base can grow significantly (Frenchman, 1998; Wilson, 1995). International banks like HSBC and BNP Paribas also have branches in the Arab region. Many other institutions are doing the same but have separate Islamic branches.

1.2 Reasons for having Islamic banking in India

The reasons for having Islamic banking in India are the following (Faridi, 1991):

1 *Islamic banking for inclusive growth:* Islamic banking can lend small loans to unorganised sectors due to its non-insistence on collateral as a precondition for lending even small sums of money. This would help to improve conditions of states of desperate labour–capital ratio like UP and Bihar.

2 *Islamic banking and financial inclusion of Muslims:* Muslims are the most disadvantaged community in financial sector according to the Sachar Committee. Due to interest-based deposit and credits from commercial banks, 80% of Muslims are financially excluded. The worker participation of Muslims in the financial sector is also less. Similarly, in other financial institutions like SIDBI and NABARD, Muslim presence is negligible. Even institutions like National Minority Development and Finance Corporation (NMDFC) have no Muslim managers. This big deficit can be covered by Islamic banking. It will not only please 150 million Muslims living in India, the second largest community of India, but also give advantage to attract trillions of Arab petrodollars.

3 *Corporate Sector and Islamic banking*: Islamic banking through equity financing to corporate can help reduce the burden of keeping current account and fiscal account deficit under control.

4 *Islamic banking to counter terrorism:* With greater inclusion of Muslim youths in the financial sector, they can contribute in a better way. One of the main reasons of terrorism is poverty and Islamic banking can alleviate the condition. Also, stringent norms of Islamic banking can help in stopping money laundering.

5 *Islamic banking and entrepreneurship:* In the book *Entrepreneurship and Indian Muslims*, Dr. M. Akbar indicates the results of a study he conducted: "… most surprising was the positive association between the degree of religious observance and level of entrepreneurship. Higher orders of entrepreneurs displayed higher degree of religious observance, as they wanted to establish in their society that they were not only better entrepreneurs but were better Muslims as well". This positive correlation between entrepreneurship and religiosity reflects well in Islamic banking among poor Muslims.

6 *Islamic banking and bankruptcy:* As Islamic banking adheres to strict credit rating by disallowing indebted people to take on more debt, and as they go for equity financing, they screen the projects more strictly, thus reducing the chances of bankruptcy.

1.3 Indian stock market and Islamic banking

The Indian stock markets could see huge inflows through *Shariah*-compliant funds as Islamic investors are lured by the country's rising economy. These will also augur well the need of Islamic banking system so that these funds can operate smoothly. The number of *Shariah*-compliant stocks in India is much higher than that of all Muslim countries put together, thus providing an immense scope for parking money, according to experts. For instance, 61% of the listed companies in India are *Shariah*-compliant, against 57% in Malaysia, 51% in Pakistan and a mere 6% in Bahrain. In terms of the number of stocks, 283 of Bombay Stock Exchange's BSE-500 constituents, 214 BSE small caps, 39 NSE-50 (Nifty) and 23 Sensex stocks are *Shariah*-compliant. There would be eight to ten funds in the Indian markets in two to three years, and these would attract at least Rs. 3000 crores from domestic sources alone. The German-based Baader Service Bank is coming in with a corpus amount of €30 million for its 'First India Islamic Fund' in Germany. The fund is awaiting FII status from the Reserve Bank of India. The *Shariah* stocks would encompass sectors such as telecom, IT/ITES, automobile, FMCG and real estate. Taurus Parsoli Ethical Fund – the maiden Islamic fund in India – The Fund, as the offer document states, is a five-year closed-ended fund, which is not listed on the exchange. Mumbai S&P CNX Shariah on 20 February 2008 announced the launch of S&P CNX 500 Shariah and S&P CNX Nifty Shariah in a move to capture the movement of *Shariah*-compliant stocks in the Indian stock market for Islamic investors. The S&P CNX 500 Shariah comprises 263 companies, while the S&P CNX Nifty Shariah comprises 40 firms.

2 Objectives of the study

The objectives of the study are the following:

- To understand the concept of Islamic banking.
- To study the prospects and awareness level amongst people with regard to Islamic banking in India.
- To find out the relationship between the demographic factors and the opinion of people with respect to Islamic banking benefits.
- To find out the relationship between the demographic factors and the opinion of people with respect to feasibility of Islamic banking in India.

3 Hypotheses

To achieve one of the above objectives, the following null hypotheses have been formulated:

Hypothesis 1: There is no significant difference in the opinion of bankers and non-bankers with respect to benefits of Islamic banking in India.

Hypothesis 2: There is no significant difference in the opinion of Muslims and non-Muslims with respect to benefits of Islamic banking in India.

Hypothesis 3: There is no significant difference in the opinion of bankers and non-bankers with respect to feasibility of Islamic products in India.

Hypothesis 4: There is no significant difference in the opinion of Muslims and non-Muslims with respect to feasibility of Islamic products in India.

4 Literature review

Numerous publications in Arabic and Urdu have made significant contributions to theoretical discussion. The early contributions on the subject of Islamic banking were somewhat casual in the sense that only passing references were made to it in the discussion of wider issues relating to the Islamic economic system as a whole. In other words, the early writers had been simply thinking aloud rather than presenting well-thought-out ideas. Thus, for example, the book by Qureshi on *Islam and the Theory of Interest* (Qureshi, l946) looked upon banking as a social service that should be sponsored by the government like public health and education. Qureshi took this point of view since the bank could neither pay any interest to account holders nor charge any interest on loans advanced. Qureshi also spoke of partnerships between banks and businessmen as a possible alternative, sharing losses if any. No mention was made of profit sharing. Ahmad (l995) envisaged the establishment of Islamic banks on the basis of a joint stock company with limited liability. In his scheme, in addition to current accounts, on which no dividend or interest should be paid, there was an account in which people could deposit their capital on the basis of partnership, with shareholders receiving higher dividends than the account holders from the profits made. Like Qureshi, above, Ahmad also spoke of possible partnership arrangements with the businessmen who seek capital from the banks. However, the partnership principle was not defined, nor was it clear who would bear the loss, if any. It was suggested that banks should cash bills of trade without charging interest, using the current account funds. The principle of *mudaraba* based on *Shariah* was invoked systematically by Uzair (1955). His principal contribution lay in suggesting *mudaraba* as the main premise for 'interestless banking'. However, his argument that the bank should not make any capital investment with its own deposits rendered his analysis somewhat impractical. A pioneering attempt at providing a fairly detailed outline of Islamic banking was made in Urdu by Siddiqi (1986). His Islamic banking model was based on *mudaraba* and *shirka* (partnership or *musharaka*, as it is now usually called). His model was essentially one based on a two-tier *mudaraba* financier–entrepreneur relationship, but he took pains to describe the mechanics of such transactions in considerable detail with numerous hypothetical and arithmetic examples. Chapra's (1985) study was also based on the *mudaraba* principle like Siddiqi's study. His main concern, however, was centred on the role of artificial purchasing power through credit creation. He even suggested that 'seigniorage' resulting from it should be transferred to the public exchequer, for the sake of equity and justice. Chapra was also much concerned about the concentration of economic power private banks might enjoy in a system based on equity financing. He therefore preferred medium-sized banks which are neither so large as to wield excessive power nor so small as to be uneconomical. Chapra's scheme also contained proposals for loss-compensating reserves and loss-absorbing insurance facilities. He also spoke of non-bank financial institutions, which specialise in bringing financiers and entrepreneurs together and act as investment trusts.

Uzair (1982) has suggested adjustments in profit-sharing ratios as a substitute for bank rate manipulations by the central bank. Thus, credit can be tightened by reducing the share accruing to the businessmen and eased by increasing it. Siddiqui (l982) has suggested that variations in the so-called 'refinance ratio' (which refers to the central bank refinancing of a part of the interest-free loans provided by the commercial banks) would influence the quantum of short-term credit extended. Siddiqi has also proposed a prescribed 'lending ratio' (i.e. the proportion of demand deposits that commercial banks are obliged to lend out as interest-free loans) that can be adjusted by the central bank according to changing circumstances. In the study of Naqvi (l993), the stress on equity-oriented transactions in Islamic banking, especially the *mudaraba* mode, has been criticised. It has been argued that the replacement of pre-determined interest by uncertain profits is not enough to render a transaction Islamic, since profit can be just as exploitative as interest is, if it is 'excessive'. Naqvi has also pointed out that there is nothing sacrosanct about the institution of *mudaraba* in Islam. Naqvi maintains that *mudaraba* is not based on the Qur'an or the Hadith but was a custom of the pre-Islamic Arabs.

5 Research methodology

The data have been collected both from primary and secondary sources. A questionnaire was used as a tool for extracting the primary information. Secondary data were collected from the documents and literature reviews, which were in printed forms based on Islamic banking, and also through various websites, research papers and reports.

In total, 125 questionnaires were distributed for responses. At the end, 96 respondents were finally chosen for the study which included approximately 50% respondents from the general population and 50% respondents from the banking population. Data have been collected using the convenience sampling technique. For the analysis of the data, *t*-statistics have been applied using the SPSS software.

6 Data analysis and findings

Data of 96 respondents have been analysed using the SPSS software. For analysing the demographic profile, the frequencies of the different variables are considered and mean and mode are calculated using SPSS. Data have been collected from both banking and non-banking professionals, and also from Muslim and non-Muslim communities to investigate the level of their awareness regarding the concept of Islamic banking in India and its products. Further, data have been analysed to see the difference in the opinion of banking and non-banking professionals regarding the benefits of Islamic banking in India. Differences in the opinion of Muslim and non-Muslim communities regarding benefits and feasibility of Islamic banking products have been analysed.

Table 1 clearly indicates that awareness of Islamic banking in India is on very nascent stage. Very few people are completely aware about the concept of Islamic banking in India.

Table 1 Showing the awareness about the concept of Islamic banking in India

	Frequency	*Percentage*
Yes, completely	5	5.2
I understand the major concepts	5	5.2
To some extent	27	28.1
Have heard about it	27	28.1
No, what is it?	32	33.3
Total	96	100.00

Table 2 Showing the awareness of products of Islamic banking

Products	*Yes*		*No*	
	Frequency	*Percentage*	*Frequency*	*Percentage*
Interest (*Riba*) is forbidden in Islam	55	57.3	41	42.7
Deposits	69	71.9	27	28.1
Investment products	37	38.5	59	61.5
Financing products	28	29.2	68	70.8
Trade finance	28	29.2	68	70.8
Money market instruments	24	25	72	75
Insurance (*Takaful*)	29	30.2	67	69.8

Table 2 confirms that most of the respondents were aware that *Riba* or the giving and taking of interest are forbidden in Islam. 42.7 % were unaware that *Riba* is forbidden. The majority of the respondents are aware of deposit products related to Islamic banking like saving account and current account. Only 28.1% of the respondents were unaware about these deposit products. The majority of the respondents were unaware of investment products related to Islamic banking. Only 38.5% of the respondents were aware about these investment products. It is again clearly visible that the majority of the respondents were unaware of even financing products related to Islamic banking. Only 29.2% of the respondents were aware about these financing products. Also, the majority of the respondents are unaware of trade finance related to Islamic banking. Only 29.2% of the respondents were aware about trade finance. The majority of the respondents were unaware of money market instruments related to Islamic banking. Only 25% of the respondents were aware about money market instruments. The majority of the respondents were again unaware of insurance products related to Islamic banking. Only 30.2% of the respondents were aware about insurance products.

Table 3 Showing the opinion of banking and non-banking professionals regarding the benefits of Islamic banking

	Occupation	*N*	*Mean*	*Std. deviation*
Economic benefits	Banker	49	2.1633	.79966
	Non-banker	47	3.3617	1.18735
Social benefits	Banker	49	2.2041	.84112
	Non-banker	47	3.1064	1.23771

Table 3 Showing the opinion of banking and non-banking professionals regarding the benefits of Islamic banking (continued)

	Occupation	*N*	*Mean*	*Std. deviation*
Refining existing banking system	Banker	49	2.3469	.87918
	Non-banker	47	2.9574	1.33445
Enhancing the status of financial centre	Banker	49	2.3061	.93995
	Non-banker	47	2.9574	1.28465
Improving the unemployment rate	Banker	49	2.3673	.97241
	Non-banker	47	3.0213	1.31032
Risks diversification in finance	Banker	49	2.5102	1.10156
	Non-banker	47	3.1915	1.26213

Table 4 Showing the difference the opinion of the banking and non-banking professional regarding the benefits of Islamic banking

	t-test for equality of means		
	t	*df*	*Sig. (2-tailed)*
Economic benefit	–5.822	94	.000
Social benefits	–4.193	94	.000
Refining existing banking system	–2.657	94	.009
Enhancing the status of financial centre	–2.843	94	.005
Improving the unemployment rate	–2.785	94	.006
Risks diversification in finance	–2.821	94	.006

It is interpreted from Table 4 that there is a significant difference between the awareness/ opinion levels of banker and non-bankers regarding the benefits derived from Islamic banking in every respect, be it economic benefit, social benefit, refining existing banking system, enhancing the status of financial centre, improving the unemployment rate or risk diversification in finance.

Table 5 Showing the opinion of the Muslims and non-Muslims regarding the benefits of Islamic banking

		N	*Mean*	*Std. deviation*
Economic benefits	Muslim	24	2.2083	1.14129
	Non-Muslim	72	2.9306	1.12996
Social benefits	Muslim	24	2.1250	.89988
	Non-Muslim	72	2.8194	1.16675
Refining existing banking system	Muslim	24	2.2917	1.12208
	Non-Muslim	72	2.7639	1.15665
Enhancing the status of financial centre	Muslim	24	2.0833	1.13890
	Non-Muslim	72	2.8056	1.12135
Improving the unemployment rate	Muslim	24	2.2917	1.04170
	Non-Muslim	72	2.8194	1.21408
Risks diversification in finance	Muslim	24	2.1250	1.11560
	Non-Muslim	72	3.0833	1.17185

Table 6 Showing the difference the opinion of the Muslim and non-Muslim professional regarding the benefits of Islamic banking

	t-test for equality of means		
	t	*df*	*Sig. (2-tailed)*
Economic benefits	–2.705	94	.008
Social benefits	–2.661	94	.009
Refining existing banking system	–1.745	94	.084
Enhancing the status of financial centre	–2.722	94	.008
Improving the unemployment rate	–1.907	94	.060
Risks diversification in finance	–3.510	94	.001

It is interpreted from Table 6 that there is a significant difference between the awareness/ opinion levels of Muslims and non-Muslims relating to the benefits derived from Islamic banking in many aspects, be it economic benefit, social benefit, enhancing the status of financial centre or risk diversification in finance. The *p*-value is less than .05 for all these parameters.

Hypothesis 1, which shows that a significant difference exists in the opinion of bankers and non-bankers with respect to benefits offered by Islamic banking, is rejected. Hypothesis 2, which shows a significant difference in the opinions of Muslims and non-Muslims with respect to benefits offered by Islamic banking, is also rejected.

Table 7 Showing the feasibility of Islamic banking products in India according to banker and non-bankers

	Occupation	*N*	*Mean*	*Std. deviation*
Bai' bithamanajil (deferred payment sale)	Banker	49	2.6735	.77427
	Non-banker	47	3.4894	1.08091
Bai' muajjal (credit sale)	Banker	49	2.7959	.76321
	Non-banker	47	3.7447	1.15096
Mudarabah (saving account)	Banker	49	2.7347	.95253
	Non-banker	47	3.6383	1.22342
Murabahah (debt financing)	Banker	49	2.7551	.80443
	Non-banker	47	3.8085	1.09620
Istisna (manufacturing finance)	Banker	49	2.7959	.88928
	Non-banker	47	3.8511	1.16056
Ijarah (lease or rent)	Banker	49	3.0816	.81232
	Non-banker	47	4.0000	1.14208
Musharakah (joint venture)	Banker	49	2.8980	.87190
	Non-banker	47	3.7447	1.20629
Qardhassan/Qardulhassan (good loan/benevolent loan)	Banker	49	3.0204	.80337
	Non-banker	47	3.6809	1.12494

Table 7 Showing the feasibility of Islamic banking products in India according to banker and non-bankers (continued)

	Occupation	*N*	*Mean*	*Std. deviation*
Sukuk (Islamic bonds)	Banker	49	3.0000	.84163
	Non-banker	47	3.9149	1.10000
Takaful (Islamic insurance)	Banker	49	2.9184	.86209
	Non-banker	47	3.8511	1.04213
Musharaka (equity financing)	Banker	49	2.8980	.91844
	Non-banker	47	3.9787	1.07318

Table 8 Showing the difference in opinion regarding the feasibility of Islamic banking products in India according to banking and non-banking professionals

	t-test for equality of means		
	T	*df*	*Sig. (2-tailed)*
Bai' bithamanajil (deferred payment sale)	–4.265	94	.000
Bai' muajjal (credit sale)	–4.779	94	.000
Mudarabah (saving account)	–4.047	94	.000
Murabahah (debt financing)	–5.384	94	.000
Istisna (manufacturing finance)	–5.013	94	.000
Ijarah (lease or rent)	–4.555	94	.000
Musharakah (joint venture)	–3.954	94	.000
Qardhassan/Qardulhassan (good loan/benevolent loan)	–3.321	94	.001
Sukuk (Islamic bonds)	–4.588	94	.000
Takaful (Islamic insurance)	–4.786	94	.000
Musharaka (equity financing)	–5.309	94	.000

It is interpreted from Table 8 that there is a significant difference between the awareness/ opinion levels of bankers and non-bankers relating to the feasibility of Islamic bank's product in every type of product or service, be it equity, insurance, Islamic bonds, good loan, joint venture, leasing, saving account, current account, etc. The *p*-value is less than .05 for all the parameters.

Table 9 Showing the feasibility of Islamic banking products in India according to Muslim and non-Muslims

	Kindly select your religion	*N*	*Mean*	*Std. deviation*
Bai' bithamanajil (deferred payment sale)	Muslim	24	2.7083	.99909
	Non-Muslim	72	3.1944	1.00195
Bai' muajjal (credit sale)	Muslim	24	2.7083	.99909
	Non-Muslim	72	3.4444	1.04664
Mudarabah (saving account)	Muslim	24	2.7500	1.15156
	Non-Muslim	72	3.3194	1.16070

Table 9 Showing the feasibility of Islamic banking products in India according to Muslim and non-Muslims (continued)

	Kindly select your religion	*N*	*Mean*	*Std. deviation*
Murabahah (debt financing)	Muslim	24	3.0833	1.01795
	Non-Muslim	72	3.3333	1.11330
Istisna (manufacturing finance)	Muslim	24	3.0417	1.04170
	Non-Muslim	72	3.4028	1.18274
Ijarah (lease or rent)	Muslim	24	3.3750	1.20911
	Non-Muslim	72	3.5833	1.04477
Musharakah (joint venture)	Muslim	24	3.2500	1.15156
	Non-Muslim	72	3.3333	1.12588
Qardhassan/Qardulhassan (good loan/benevolent loan)	Muslim	24	3.0833	1.10007
	Non-Muslim	72	3.4306	.99047
Sukuk (Islamic bonds)	Muslim	24	3.0417	1.12208
	Non-Muslim	72	3.5833	1.03120
Takaful (Islamic insurance)	Muslim	24	3.1250	1.11560
	Non-Muslim	72	3.4583	1.03376
Musharaka (equity financing)	Muslim	24	3.0417	1.12208
	Non-Muslim	72	3.5556	1.11189

Table 10 Showing the difference in opinion regarding the feasibility of Islamic banking products in India according to Muslim and non-Muslims

	t-test for equality of means		
	t	*df*	*Sig. (2-tailed)*
Bai' bithamanajil (deferred payment sale)	–2.060	94	.042
Bai' muajjal (credit sale)	–3.017	94	.003
Mudarabah (saving account)	–2.085	94	.040
Murabahah (debt financing)	–.972	94	.333
Istisna (manufacturing finance)	–1.332	94	.186
Ijarah (lease or rent)	–.813	94	.418
Musharakah (joint venture)	–.312	94	.756
Qardhassan/Qardulhassan (good loan/benevolent loan)	–1.447	94	.151
Sukuk (Islamic bonds)	–2.180	94	.032
Takaful (Islamic insurance)	–1.341	94	.183
Musharaka (equity financing)	–1.956	94	.053

It is interpreted from Table 10 that there is a significant difference between the awareness/opinion levels of Muslims and non-Muslims relating to the feasibility of Islamic bank's product in many types of products or services such as Islamic bonds,

saving account, credit sale and deferred payment sale, as the *p*-value is less than .05 for all these parameters. For rest of the products, such as equity, Islamic insurance, good loan, joint venture, leasing, manufacturing finance and debt finance, there is no significant difference in the opinion on feasibility.

Hypothesis 3, which shows that a significant difference exists in the opinions of bankers and non-bankers with respect to feasibility of Islamic products in India, is rejected. Hypothesis 4, which shows that a significant difference exists in the opinions of Muslims and non-Muslims with respect to feasibility of Islamic products in India, is also rejected.

7 Conclusion

India being a country of opportunities, Islamic banking has good prospects in India. However, it is presently facing many challenges that need to be addressed. As seen from the paper, there exists a difference of opinion between various strata of population. This requires a dedicated effort of a strong committee which can take an unbiased stand, both from economic and secular perspectives, and recommend changes to be brought in the 'Banking Regulation Act' for introduction of Islamic banking in India. It is believed that such a system will offer an effective banking system where Muslims in India may invest in pursuant to Islamic principles and the rest may have an alternative to interest bearing conventional banking. Both systems can co-exist. People of the largest democracy can decide democratically which one they should bank upon. The young sapling of Islamic banking must be nurtured by the government so that the country may reap the benefit of it in the coming period (Mirakhor, 1997). Islamic banking can boost the Indian economy by boosting real sector economy rather than only the financial sector. There are many advantages of Islamic banking, but the main advantage is that the Muslims are so poor today that we truly owe it not only to our forefathers and the current generation, but also to the future generations of Indians to make things better. There are certain costs in implementing Islamic banking, but the expected value of such a reform is quite high. Many new *Shariah*-compliant financial instruments are being developed throughout the world from which Indian regulators can learn and inculcate. India should take help to make regulatory framework from foreign banks which have operations in the Islamic banking environment. Taking all these points into consideration, India should open up for Islamic banking so that Indian Muslims are benefitted and a huge amount of FDI from Muslims worldwide comes in the country.

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Olfactory branding: a new trend for defining brands through smell – a case of ITC Sonar Hotel in Kolkata, India

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Abstract: Smell triggers immediate emotional response. Today's marketers are conscious about its usefulness in communicating with consumers, leading to the advent of Olfactory Branding, creating an experiential retail environment having fragrance to stimulate the overall experience of the consumer. Previously branding was guided more by audiovisual stimulus but because of tremendous advertising clutter it is becoming difficult for organisations to create a niche. It started with the implementation of sensory branding using all five sense organs, though observed initially that senses like sight and hearing were extensively used, whereas smell was potentially underused. This paper tries to understand and create awareness of the proper usage of olfactory branding trends in ITC Sonar Hotel in Kolkata to persuade and convert potential customers into buyers and also to create an insight into the psychological background of scent branding and gives the basis of relevance of Olfactory Communication to influence consumers.

Keywords: scent; branding; retail store; ambience; consumer awareness; sensory stimulus; global markets.

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This paper is a revised and expanded version of a paper entitled 'Olfactory branding: a new trend for defining brands through smell: a case on ITC Sonar Hotel in Kolkata, India' presented at the 'SIBR-Thammasat Conference on Interdisciplinary Business & Economic Research', 5–7 June 2014 Bangkok.

1 Tourism and hospitality industry in India

1.1 Introduction

The Indian tourism and hospitality industry has emerged as one of the key industries driving the growth of the services sector in India. Tourism in India has registered significant growth in the recent years and the country has tremendous potential to become a major global tourist destination.

Indian tourism industry is thriving due to an increase in Foreign Tourist Arrivals (FTA) and greater number of Indians travelling to domestic destinations than before. In the past few years, the real growth has come from within the domestic sector as around 30 million Indians travel within the country in a year. Strong growth in per capita income, rising young population coupled with changing lifestyles are leading to greater expenditure on leisure services.

Hotels are an important component of the tourism product. They contribute in the overall tourism experience through the standards of facilities and services offered by them. The fortunes of the hospitality industry have always been linked to the prospects of the tourism industry and tourism is the foremost demand driver of the industry.

Travel and tourism's contribution to capital investment is projected to grow at 6.5% per annum during 2013–2023, above the global average of 5%. The tourism policy of the government of India aims at speedy implementation of tourism projects, development of integrated tourism circuits, special capacity building in the hospitality sector and new marketing strategies.

1.2 Market size

The total market size of the Indian tourism and hospitality sector stood at US$ 117.7 billion in 2011 and is expected to touch US$ 418.9 billion by 2022.

The Foreign Direct Investment (FDI) inflows in the hotel and tourism sector during April 2000 to July 2013 stood at US$ 6754.49 million, as per the data released by the Department of Industrial Policy and Promotion (DIPP).

FTA during the month of August 2013 stood at 4.74 lakh as compared to 4.46 lakh during August 2012, registering a growth of 6.4%.

Foreign Exchange Earnings (FEE) during the month of August 2013 were US$ 1.294 billion as compared to FEEs of US$ 1.306 billion during August 2012 and US$ 1.264 billion in August 2011.

The numbers of tourists availing the tourist Visa on Arrival (VOA) scheme during January to August 2013 have recorded a growth of 29.4%. During the period, a total number of 12,176 VOAs have been issued as compared to 9412 VOAs during the corresponding period of 2012.

1.3 Major developments and Investments

India is expected to receive nearly half a million medical tourists by 2015, implying an annual growth of 30%. The country has received 43.06 lakh foreign tourists during January–August 2013. India is perceived as one of the fastest growing medical tourism

destinations. The number of medical tourists coming to India has registered a growth of 40% in the past six months. The inflow of medical tourists is expected to cross 45 lakh by 2015 from the current level of 25 lakh.

The Taj Group has launched The Gateway Hotel IT Expressway Chennai, its first hotel in the city under the Gateway Hotels & Resorts brand.

Marriott International has launched its business hotel brand Courtyard by Marriott at the industrial and auto hub of Chakan near Pune in Maharashtra.

ITC Hotels has tied up with Bahrain-based India-born billionaire Mr. Ravi Pillai to manage five of its hotels under the Welcom Hotel and Fortune brands in India and Dubai.

Ecole hôtelière de Lausanne has opened a 67,000 square feet campus in India to tap into the growing demand for skilled hospitality professionals in the country. Located in the newly developed Lavasa Township near Pune, Ecole Hoteliere Lavasa will offer a four-year programme.

1.4 Government initiatives

The government has allowed 100% FDI under the automatic route in the hotel and tourism-related industry, according to the consolidated FDI policy, released by DIPP, Ministry of Commerce and Industry, Government of India.

The Ministry of Tourism, Government of India, has signed bilateral agreements/ Memoranda of Understanding (MoU) with 47 countries, a tripartite agreement between India, Brazil and South Africa, and a multilateral agreement between India and member states of Association of Southeast Asian Nations (ASEAN) for cooperation in the tourism sector.

The Ministry of Tourism as part of its promotional activities releases campaigns in the international and domestic markets under the Incredible India brand-line, to promote various tourism destinations and products of India. The budget allocated for the domestic promotion and publicity and overseas promotion and publicity including marketing development stood at Rs. 110 crore (US$ 17.73 million) and Rs. 350 crore (US$ 56.41 million) for the FY 2013–2014.

The ministry has set up a Hospitality Development and Promotion Board, which will monitor and facilitate hotel project approvals. The allocation for Ministry of Tourism in the Union Budget 2013–2014 has been increased by Rs. 87.66 crore (US$ 14.13 million) to Rs. 1297.66 crore (US$ 209.30 million).

In a major boost to the North-East tourism sector, Mr. K. Chiranjeevi, Union Minister for Tourism, Government of India, has approved Central Finance Assistance (CFA) to various tourism development projects in the states of Arunachal Pradesh, Sikkim and Nagaland. The ministry has approved CFA of Rs. 25.04 crore (US$ 4.03 million) for the ongoing tourism mega circuit projects at Tirupati and Kadapa district in Andhra Pradesh.

The government has proposed to set up the Central Institute of Hotel Management (IHM), Catering Technology and Applied Nutrition in the country. The IHM will be set up at Jagdishpur, Uttar Pradesh.

The Ministry of Tourism has undertaken joint development of tourist amenities at Amritsar and Rai Bareilli, Trivandrum, Gaya and Agra Cantt Railway stations in association with the Ministry of Railways. CFA of Rs. 10.28 crore (US$ 1.65 million), Rs. 5.98 crore (US$ 964,453.42), Rs. 5.18 crore (US$ 835,413.19) and Rs. 5.05 crore (US$ 814,141.59) have been provided by the ministry for the same.

2 Olfactory branding and hospitality industry

Olfactory branding is:

> *One of the most significant features of the total product is the place where it is bought or consumed. In some cases the place, more specifically the atmosphere of the place, is more influential as the product itself in the purchasing decision. In some cases, the atmosphere is the primary product* (Kotler, 1973, p.48)

The smell of strong coffee beans of Starbucks, perfumes in Shopper's Stop (Bless et al., 1990) and stuffed cookie aromas from Cookie Man are all about today's branding therapy (Bone and Jantrania, 1992). It seems that olfactory branding or better known as scent branding is an essential part of today's consumers' daily life. Olfactory branding relates with our nose, and it is the only sensory stimulus which has got direct contact with our brain.

Scent marketing is becoming an incredible tool as brands discover the role scent plays in connecting with customers on an emotional level (Bosmans, 2006). It is most effective when combined with other sensory triggers, such as sight, sound and textures to create a unique customer experience (Clegg, 2006). Scent can trigger a memory or desire that influences a purchase decision. Across industries, businesses are using scent as part of multi-sensory marketing strategies to enhance customers' experiences of a location and its products or services (Donovanand Rossiter, 1982). This all adds up to a new way of impressing a company's brand identity on the memory of the consumer: *not just a logo*, but also an olfactory experience (Engen, 1982). Research has shown that *people remember 35% of what they smell*, compared with only *5% of what they see*, *2% of what they hear* and *1% of what they touch* (Eroglu and Machleit, 1990; Hirsch, 1995). Scent makes a brand identity more unique, strengthens customer loyalty and adds to the perception of quality, an element that is essential to every brand in today's competitive market (Knasko, 1989).

Top ten smells that make people happy are as follows:

1 freshly baked bread,
2 clean sheets,
3 freshly mown grass,
4 fresh flowers,
5 freshly ground coffee,
6 fresh air after rainfall,
7 vanilla,
8 chocolate,
9 fish and chips,
10 bacon frying.

Key properties in Kolkata are as follows:

- ITC Sonar,
- Swissotel,
- Hyatt Regency,
- The Oberoi Grand,
- Taj Bengal,

- The Sonnet,
- Monotel Luxury Business Hotel,
- Park Hotel,
- The Kenilworth,
- The Gateway Hotel,
- The Sapphire Suites.

3 ITC Sonar, Kolkata

- ITC Sonar, Kolkata, is the first hotel in east India to have been awarded the coveted Platinum certification under the Leadership in Energy and Environmental Design (LEED®) certification programme.
- ITC Sonar uses considerably *less energy* than that used by the average large size luxury hotel.
- The hotel has a computer-based building management system to monitor and control the Heating, Ventilation and Air Conditioning (HVAC), lighting, metering and water management system.
- Automatic lighting controls (building management system) have been installed to time off the non-emergency lighting during after-business hours.
- Sonar is the first hotel to receive carbon credits in the world through the *CDM* initiatives of *UNFCCC*.

3.1 ITC Sonar's success in implementing scent branding

ITC Sonar started off their luxury hotel chain in Kolkata with the aim of refreshing the minds of their customers not only with utmost luxury during their stay in the hotel (Krishna, 2009), but also with what is called the olfactory branding projected in fetching more customers (Krstiger, 2008).

Strategically positioned at entrances to greet guests as they arrive, ScentWave scent (Lawless, 1991) delivery systems offer a light and refreshing *White Tea* welcome in ITC Sonar hotel in Kolkata (Lindstrom, 2002). ITC Sonar has taken the idea of sensory branding and signature scent to a whole new level, and they have successfully enriched the overall 'in-stay' experience.

A retailer survey would reflect the way scent branding was projected for ITC Luxury Collection Hotel Chain.

4 Methodology

In total, 250 questionnaires were distributed to the guests of ITC Sonar Hotel, Kolkata. The questionnaire happened to reach those guests who have prior experience of staying at other luxury hotels as well apart from ITC Sonar in Kolkata (see Appendices A and B for questionnaires).

Out of the 250 questionnaires, 230 were usable and valid for analysis and 30 have to be dropped due to incomplete response.

A percentage distribution was carried out from the questionnaires acquired in order to come to the findings which have been stated in the following section.

5 Findings

The researcher took a sample size of around 200 guests who visited and stayed in the hotel during a period of two months using a random sampling method. The result is surprisingly encouraging. More than 41% of the guests agreed to the fact that scent was actually a very key factor which enhanced their 'in-stay' experience during their period of stay. They felt much more relaxed and rejuvenated. More than 85% of the customers committed in making a repeat visit to the ITC Sonar Luxury Hotel collection in Kolkata. More than 43% of the customers told that ITC Sonar is the first name that hits their mind when they think about staying at a star category hotel. Almost as good as 52% guests suggested that scent within the hotel premises took more attention than any other sensory attributes present.

Figure 1 Key influencing factors that play an important role for the in-stay experience at ITC Sonar (see online version for colours)

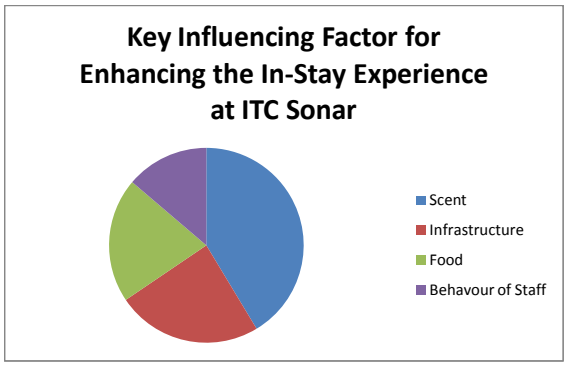


Figure 2 Demonstration of guests considering a repeat visit at ITC Sonar (see online version for colours)

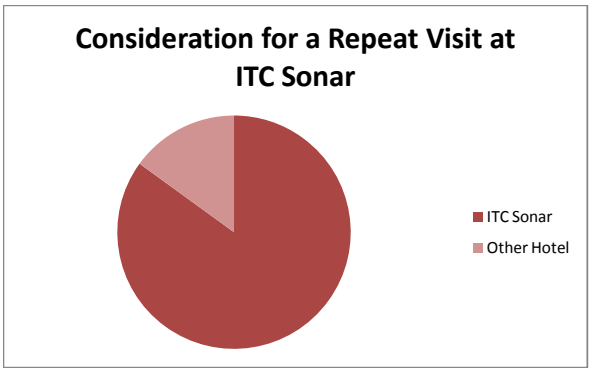
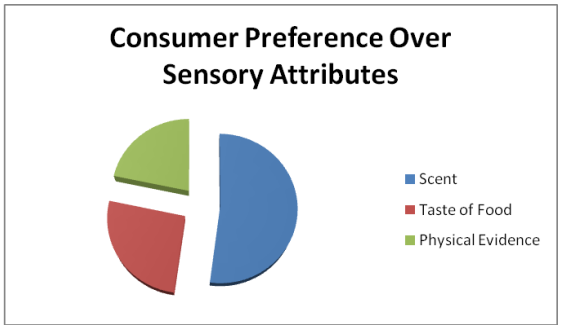


Figure 3 Depiction of which hotel comes in the minds of the customers while preferring to stay in a star category hotel (see online version for colours)

Figure 4 Preference of scent as a key sensory attribute to any other service attributes while staying in a hotel (see online version for colours)



6 Suggestions and recommendations

The Indian hospitality industry is yet to utilise the hugely potential scent branding (Lindstrom, 2005). Though there are a few organisations that are currently using scent branding, a major chunk of the hotel industry is yet to understand the power of olfactory branding on a serious note (Mattila and Wirtz, 2001).

ITC Sonar could think about introducing two or three more aromas for their hotel apart from their signature brand 'white tea' so that customers could actually experience a wonderful stay (Morrin and Ratneshwar, 2000). What happens in the process is that the guests could build a loyalty with the brand and whenever they think of staying in a hotel in the Kolkata region, ITC Sonar comes on their mind (Spangenberg et al., 1996).

7 Conclusion

To date, the exploration of olfactory branding for the Indian hospitality sector is very limited. However, the scope for utilising this powerful branding strategy is unparallel. The Indian hotels have also started trying to apply the essence of scent branding. I have

tried to provide suggestions for ITC Sonar on how to explore this unique strategy in terms of implementing smell in the hospitality industry and create a brand niche. Through successful implementation of scent branding could ITC Sonar actually prove to be a clear winner in the luxury hotel segment.

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Appendix A: Questionnaire for ITC Sonar, Kolkata

Please mark the correct answer with Bold Font

1 ITC Sonar is using marketing techniques (as **music**, **scent**) to promote service and in-stay experience.

Not at all (1) 2 3 4 **5** (very much)

2 Which sense are stimulated most with these branding techniques?

Sight (light, colour, decor)

Hearing (music, sound)

Touch (consumers can touch the product)

Taste (consumers can taste the product)

Smell (perfumes, odours, fragrance)

3 ITC Sonar is aware of sensory branding concepts?

1 2 3 4 **5**

4 ITC Sonar is aware of scent branding concepts?

1 2 3 4 **5**

5 ITC Sonar is using fragrance or perfumes inside the Hotel?

Y N

6 If 'No', why? (You can choose more than one option)

i) It is too expensive

ii) It is too difficult to use

iii) I don't find it that interesting

iv) I am not aware of this practice so I never thought of using it

v) Others (please specify)

7 Do you agree with the following statements?

a) ITC Sonar is using fragrance to create an atmosphere

1 (Totally disagree) 2 3 4 **5** (Totally agree)

b) ITC Sonar is using fragrance to make people enter the Hotel

1 2 **3** 4 5

c) ITC Sonar is using fragrance to reinforce the brand image

1 2 3 4 **5**

d) ITC Sonar is using fragrance to create a unique 'in-stay' experience

1 2 3 4 **5**

e) ITC Sonar is using fragrance so that customers can differentiate between brands

1 2 3 4 **5**

Appendix B: Questionnaire for guests staying at ITC Sonar Kolkata

Please mark the correct answer with Bold Font

1 Which category below includes your age?

20–25, 25–35, 35–45, 45-55, >55

2 What is your Gender?

Female, Male

3 What is your monthly salary?

<10 K, 10–20K, 20–30K, 30–40K, >40K

4 In a month how much time do you spend on travelling and staying at a hotel?

<5 days, 5–10 days, 10–15days, 15–20 days, >20 days

5 When do you last remember visiting a hotel with strong aroma?

Never, Less Frequent, frequent, Very Frequent, Always

6 When have you last smelt a brand?

Never, Within the last one year, Last month, Within last few days, Very Often

7 Do you enjoy staying at ITC Sonar hotel under aromatic conditions?

Yes, No

8 Do you believe that you would prefer to stay in a hotel which emits strong fragrance?

Yes, No

9 Do you believe that you would be able to differentiate a brand with strong fragrance?

Yes, No

10 Do you believe that ITC Sonar would be able to create a niche with their Scent Branding implementation?

Yes, No.

The implementation of quality management practices in Indonesian SMEs

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Abstract: This paper examines the perceptions of SME owners/managers about the implementation of quality management practices. The framework adopted was systematically developed from the literature on quality management practices. In particular, survey responses from 338 of the Indonesian SMEs were used to assess the implementation level of quality management practices in terms of product quality, process quality, system quality, total quality and business quality stages. The statistical methods were applied to evaluate the implementation levels of the quality practices in different stages. The results can provide important insights to SME owners on gaining their competitive advantage. Further, some managerial implications of this study are also presented.

Keywords: quality management practices; implementation levels; SMEs; business sectors.

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1 Introduction

1.1 Research background

In today's highly competitive business environment, Total Quality Management (TQM) is viewed as a strategy to meet or exceed customers' needs. The emergences of

quality play a vital role and have become a top priority for the companies in order to achieve their goals and gain competitive advantages (Talib et al., 2013). Research on quality management area has increased dramatically in the past decade, both in the manufacturing industries (e.g. O'Regan and Ghobadiah, 2004; Jones et al., 2005; Deros et al., 2006; Jitpaiboon and Rao, 2007; Bayazit and Karpak, 2007; Abdul-Aziz et al., 2000; Ooi et al., 2012) and in service industries (e.g. Behara and Gundersen, 2001; Gustafsson et al., 2003; Gupta et al., 2005; Talib and Rahman, 2010; Talib et al., 2011). However, there are some differences in empirical research related to the implementation of quality management practices between the large and small and medium companies.

Small and Medium Enterprises (SMEs) arguably form a significant proportion of economic development (O'Regan and Ghobadiah, 2004; Aragon-Sanchez and Sanchez-Marin, 2005). They play a critical role in the economic development of a country because more than 90% of the total number of companies are SMEs (Fening and Appiah, 2008). The SMEs in Indonesia have had an important role in the development of Indonesia's economic growth, which have given a contribution of as much as Rp. 2.121.3 trillion or 53.6% from Rp. 3.957.4 trillion of Indonesia's total Gross Domestic Product (GDP) (Central Bureau of Statistics, 2008). Due to the SMEs' big contributions to GDP growth, the government of Indonesia is trying to support them in order to increase their performance and entrepreneurship abilities. The other reasons why SMEs are very important for the economic development of Indonesia are the following: SMEs have an important role for supporting the development and the growth of export, SMEs have been an important provider of employment and SMEs can also be used by a lot of households either to get primary income or as an alternative for getting secondary income (Tambunan, 2007). Therefore, SMEs contribute greatly to job creation, income generation and GDP. But SMEs often encounter strong threats to their development and survival.

Although the Indonesian government had established various strategies to enhance the SMEs' performance, not all of these strategies had a significant effect on the SMEs. It was because some strategies were less useful and inappropriate with their needs (Tambunan, 2007). There are many strategies that can help SMEs to raise their competitive advantage. One of the strategies is to pursue TQM. The successful implementation of quality management will improve the organisational performance: profitability, customer satisfaction, sales growth, etc. (Fening and Appiah, 2008). Understandably, many countries' governments actively promote quality to their small and medium companies in order to increase the competitive advantage of their national economy (Abdul-Aziz et al., 2000; Sturkenboom et al., 2001; Fening and Appiah, 2008; Kumar and Antony, 2008).

There are a lot of differences between SMEs and large companies in the way they do their businesses. The large enterprises mostly have more complex system and outstanding technology to do their business. They are mostly bureaucratic, hierarchical with several departments, have high degree of standardisation and formalisation, and are dominated by system. These characteristics are completely different from the characteristics of SMEs, which do not rely on formal system and procedures, more people dominated and have flat or flexible organisational structure (Ghobadian and Gallear, 1996). For SMEs in Indonesia, Tambunan (2007) acknowledged that they have a lack of knowledge of production improvement methods, low levels of productivity, poor-quality products and have difficulty in upgrading the products. Therefore, these problems could prevent the development of SMEs in Indonesia and could also encourage the

government to support them. Based on these characteristics, SMEs in Indonesia still have big opportunities to improve their business performance using quality management concepts.

According to these discussions, now it can be proposed that quality issues have become increasingly important for SMEs, and several researches (e.g. Van der Wiele and Brown, 1998; Wiklund and Wiklund, 1999; Sturkenboom et al., 2001; Kuratko et al., 2001; Fening and Appiah, 2008; Kumar and Antony, 2008) discuss the implementation of quality management practices within SMEs. The management of quality in small and medium companies may be different from that in large companies. This research aims to empirically investigate the implementation of quality management in Indonesian SMEs and explore the stages in which SMEs can learn from each other. In this research, the framework of the quality practices is systematically developed for SMEs, which includes product quality, process quality, system quality, total quality and business quality stages. Then, the questionnaire is used to investigate the implementation level of their quality practices. Using the statistics, we can compare the implementation levels of the quality practices among SME types.

This paper is structured as follows. The next section introduces the characteristics of Indonesian SMEs. After that, research methods and empirical data are described. Then, the differences in quality practices of each quality management stage are analysed. Finally, contributions and practical implications of this study are concluded.

2 The characteristics of Indonesian SMEs

Defining the term of SMEs is sometimes controversial and arguable (Street and Meister, 2004). There are various ways to determine the definition of SME and the definitions differ across countries. Different countries have somewhat different definitions for the size of SMEs. For example, European Commission divide SME sector into three components: micro-enterprises with 0 to nine employees; small enterprises with 10–99 employees; medium enterprises with 100–499 (Denti, 1996). In the Netherlands, the Central Bureau of Statistics and the Economic Institute for SMEs defines small enterprises as having fewer than ten employees and medium enterprises as having 10–100 employees (Sturkenboom et al., 2001). The Malaysian government defines the size of enterprises by the number of employees and annual sales. Enterprises with fewer than or equal to 150 employees and an annual sales turnover of less than 25 million are considered as SMEs. In Taiwan, SMEs are categorised into three sizes: micro-enterprises with one to five employees, small enterprises with 6–99 employees and medium enterprises with 100–200 employees (www.stat.gov.tw).

In Indonesia, the Central Bureau of Statistics (BPS) defines the classification of SMEs based on the amount of workforces (Tambunan, 2007). The amount of workforces for micro, small, medium and large enterprises are one to four workers, 5–19 workers, 20–99 workers and 100 workers or more, respectively. The definitions from BPS are used in this research as the basis for categorising among all respondents and also to validate the questionnaires. According to the data from the Ministry of Cooperative and SMEs (2007–2009), the total number of SMEs in Indonesia in 2007 is 49,824,123 units, of which 98.92% or 49,287,276 units belong to micro business, 1% or 498,565 units belong to small business and 0.077% or 38,282 units belong to medium business. The

total number for large business in Indonesia is 4463 units. Based on this information, this research will not try to analyse the micro, small and medium businesses separately, but they will be regarded as one group called SMEs instead.

3 Research framework and empirical study

3.1 Research framework

Research framework is very important as it can guide researchers on what steps need to be taken in order to accomplish the objectives of the research. In order to accomplish the objective of this research, the framework of the quality practices was built and carried out for Indonesian SMEs. The quality experts indicate that different size of companies will adopt different quality practices with different implementation levels in different quality management stages. Thus, we first take into account the implementation of quality management with different stages and then divide the activities of quality management into five stages. Each implementation stage is explained as follows:

- *Product quality:* in this stage, the activities that can be used to control the product/service quality will be adopted.
- *Process quality:* the enterprises must control the manufacturing/provision processes in order to assure the quality of products/services.
- *System quality:* only process control is not enough to guarantee the quality of a product/service. The whole quality control system, from procurement, materials, designs, production to delivery, must have equal emphasis.
- *Total quality:* the companies should implement the TQM, which monitors all aspects of quality related to products/services, processes and systems, in order to maintain customer satisfaction.
- *Business quality:* the enterprises should adopt the good business model and also propel strategy management based on their mission and vision. The goal is to build competitive advantage, pursue rapid development and raise profits.

In each stage, there are some appropriate practices/activities that can be adopted by the SMEs. Based on the literature review (Ghobadian and Gallear, 1996; Van der Wiele and Brown, 1998; Wiklund and Wiklund, 1999; Abdul-Aziz et al., 2000; Sturkenboom et al., 2001; Kuratko et al., 2001; O'Regan and Ghobadiah, 2004; Jones et al., 2005; Fening and Appiah, 2008; Kumar and Antony, 2008) and expert opinion, these quality activities will be developed according to different implementation stage only for SMEs. The framework is shown in Table 1.

Table 1 The quality practices of the five stages of quality management for SMEs

Stage	*Quality practices/activities*
Product quality	Incoming inspection for materials (PQ1)
	In-process inspection (PQ2)
	Autonomous inspection by the workers (PQ3)
	Analysis and improvement for failed products (PQ4)
	Final products inspection before delivery (PQ5)

Table 1 The quality practices of the five stages of quality management for SMEs (continued)

Stage	*Quality practices/activities*
Process quality	Processes standardisation (PRQ1)
	Use simple tools to improve process quality (PRQ2)
	Informal improvement team (PRQ3)
	Periodical maintenance for facilities/machines (PRQ4)
	Process performance indicators (PRQ5)
System quality	Operations of product/service delivery system (SQ1)
	Incoming control and supplier assessment (SQ2)
	Elimination of all wastes (SQ3)
	Operation of ISO 9001 (SQ4)
	Performance evaluation system of input-process-output (SQ5)
Total quality	Informally understand the customers' needs (TQ1)
	Adopt daily management (TQ2)
	Customer's complaints handling (TQ3)
	Develop the new product/service to meet customers' needs (TQ4)
	Continuous improvement by full participation (TQ5)
	Realisation of teamwork (TQ6)
	Cultivate the quality- and customer-focused culture (TQ7)
	Education and training of quality for employees (TQ8)
Business quality	Management of customer loyalty (BQ1)
	SWOT analysis and strategy management (BQ2)
	Strategy planning focused on customer and market (BQ3)
	Develop the innovative products/services (BQ4)
	Develop new market (BQ5)
	Implement KPIs management (BQ6)

3.2 The empirical study

This present study uses a descriptive cross-sectional study design. It is concerned with analysis of situation, problem, opinions and demographic information. In order to answer the objectives of this research, we had to study sample of SMEs in Jakarta, Indonesia. The empirical study was conducted based on the survey. The questionnaire was pretested by pilot respondents. Experts on the subject were also consulted, to ensure that the questions were properly phrased and suitable for SMEs. The comments and feedback given were very useful in improving the instrument. The questionnaire consists of two main sections. The first section includes the general information of the SMEs participating in this study. This includes the name of the company, location, type of business, number of employees and asset values. The second part of the questionnaire explores the implementation levels and the degree of effectiveness of the quality practices in five different stages. In this part, the questionnaire employed a five-point Likert scale from 1 ('is not implemented at all') to 5 ('is implemented completely') to assess the implementation level of each practice for the companies.

Data for this study were collected through questionnaires and supported by interviews. For each sample SME, we solicited only one response. The respondents consist of SME owners and managers. They were chosen as the sample of the study because they have direct first-hand knowledge and experience in quality management implementation. We spread the questionnaires to 400 SMEs and received 338 valid questionnaires (response rate 84.5%) during a three-month period. Data were analysed by using descriptive analysis to assess the implementation levels of each quality practices in different stages. Within the sample, there were seven types of businesses: apparel/ clothing furniture, food and beverage, printing, handicraft, repair services and others. Significance test [Analysis of Variance (ANOVA)] was performed to study the differences between the mean score of quality management implementation in each stage of the seven business types being studied.

4 Result and analysis

4.1 Profile of SMEs

Descriptive statistics were used to initially analyse the survey data. The company variables consisted of location, types of business, number of employees and assets value. The demographic profiles of the respondent companies embraced in this study and their characteristics are shown in Table 2.

Table 2 Demographics' profile of SMEs ($N = 338$)

Characteristics	*Frequencies (percentage)*
Location	
Central Jakarta	47 (13.91%)
North Jakarta	89 (26.33%)
East Jakarta	61 (18.05%)
West Jakarta	98 (28.99%)
South Jakarta	43 (12.72%)
Types of business	
Apparel/clothing	100 (29.59%)
Furniture	79 (23.37%)
Food and beverage	42 (12.43%)
Printing	34 (10.06%)
Handicraft	30 (8.88%)
Repair services	17 (5.03%)
Others	36 (10.65%)
Number of employees	
≤4 employees	133 (39.35%)
5–19 employees	146 (43.20%)
20–99 employees	59 (17.46%)

Table 2 Demographics' profile of SMEs (N = 338) (continued)

Characteristics	*Frequencies (percentage)*
Asset values (in Rupiahs)	
≤0 millions	144 (42.60%)
50–100 millions	103 (30.47%)
100–500 millions	66 (19.53%)
>500 millions	25 (7.40%)

4.2 Reliability and validity tests

A reliability test was done to ensure that the questionnaire items have the ability to provide consistent results in repeated incidences. It is the most commonly followed technique of measuring internal consistency among a group of items combined to form a single scale and reflects the homogeneity of the scale (Nunnally and Berstein, 1994). In this empirical study, Cronbach's α was employed to measure internal consistency of the questionnaire (Koufteros, 1999) and factor loading analysis to assess the content validity. Based on the 338 valid questionnaires, we obtain the Cronbach α values ranging from 0.821 to 0.915 of the five quality stages for the implementation level, and from 0.885 to 0.956 of the five quality stages for the degree of effectiveness, which were all greater than 0.70 (Cronbach et al., 1965; Churchill, 1991; Litwin, 1995; Hair et al., 2010). These results confirm the significantly high consistency of the questionnaire.

Content validity is subjectively judged by the researchers. There is a consensus among researchers that the questionnaire includes items that cover all aspects of the variable being measured (Hair et al., 2010). For this study, all items included in the questionnaire have been developed based on both a literature review and detailed evaluations by academics and practicing managers/owners of SMEs. Twenty-nine items in the questionnaire were answered and the response rate was 84.5%. Thus, it is believed that this research instrument has good content validity.

Construct validity is the extent to which a measure is related to other measures in a manner consistent with theoretically based concepts. A measure has construct validity if it measures the theoretical construct that it was designed to measure. For the implementation levels, all first-order factors range from 0.521 to 0.834. Since the Cronbach α values are very high, these results of factor loading statistics confirm the construct validity (Nunnally and Berstein, 1994). For the degree of effectiveness, the factor loading statistics range from 0.511 to 0.778. This result is also satisfactory according to Nunnally and Berstein (1994). Having conducted this analysis, the research instrument had been validated for construct validity.

4.3 The implementation levels of quality management practices

The indicator investigated is on the levels of implementation in different stages performed by SMEs in Jakarta. Table 3 displays the overall mean score for each quality stage. The mean values range from 3.14 to 3.77, which correspond to a 'moderate' to 'high' degree of implementation on the five-point Likert scale. It can be seen that the highest implementation level of quality practices is in the 'product quality' stage (3.77). On the other hand, the least implementation level of quality activities practiced by SMEs can be found in the 'process quality' stage (3.14)

Table 3 Mean score for each stage of Quality Management (QM)

The stage of QM practices	*Mean score*	*Rank*
Product quality	3.77	1
Process quality	3.14	5
System quality	3.38	3
Total quality	3.68	2
Business quality	3.32	4
Average mean score	3.46	

From the results, it can be seen that most SMEs had already realised what quality practices they performed to be effective into implementation, especially in the 'product stage'. However, there is still the need for more efforts to be focused on improving the quality practices, especially in the 'process quality' stage. The statistical comparison to test whether there was significant difference in the implementation level of quality practices in each stage based on type of SMEs business will be discussed in the next section.

4.4 Difference of quality practices among SMEs

The previous section described the mean score of the quality practices in five different quality management stages. From the results, it was shown that, overall, both the most implemented quality practices are in the 'product quality' stage. In an attempt to find out whether there are any significant differences for each quality practice in each stage among SMEs, in terms of the level of implementation, hypothesis testing was carried out. In order to conduct the test, the following hypotheses were proposed:

Hypothesis 1: There is no significant difference in the mean of each quality practice in a QM stage among SMEs based on types of business.

Hypothesis 2: There is significant difference in the mean of each quality practice in a QM stage among SMEs based on types of business.

The one-way ANOVA by using SPSS 17.0 was employed to analyse whether differences exist between the mean values of quality practices in each of the business.

Table 4 One-way ANOVA test result on implementation level – 'product quality' stage

ANOVA						
		Sum of squares	*df*	*Mean square*	*F*	*Siq.*
PQ1	Between groups	14.857	6	2.476	1.827	.093
	Within groups	448.602	331	1.355		
	Total	463.459	337			
PQ2	Between groups	35.553	6	5.926	4.926	.000
	Within groups	398.130	331	1.203		
	Total	433.683	337			

Table 4 One-way ANOVA test result on implementation level – 'product quality' stage (continued)

		ANOVA				
		Sum of squares	*df*	*Mean square*	*F*	*Siq.*
PQ3	Between groups	17.880	6	2.980	2.647	.016
	Within groups	372.629	331	1.126		
	Total	390.509	337			
PQ4	Between groups	43.620	6	7.270	5.752	.000
	Within groups	418.383	331	1.264		
	Total	462.003	337			
PQ5	Between groups	7.727	6	1.288	1.421	.206
	Within groups	299.953	331	.906		
	Total	307.680	337			

Table 5 One-way ANOVA test result on implementation level – 'process quality' stage

		ANOVA				
		Sum of squares	*df*	*Mean square*	*F*	*Sig.*
PRQ1	Between groups	39.S04	6	6.634	5.667	.000
	Within groups	387.512	331	1.171		
	Total	427.317	337			
PRQ2	Between groups	20.664	6	3.444	2.443	.025
	Within groups	466.685	331	1.410		
	Total	487.349	337			
PRQ3	Between groups	39.395	6	6.566	3.975	.001
	Within groups	546.747	331	1.652		
	Total	586.142	337			
PRQ4	Between groups	37.480	6	6.247	4.380	.000
	Within groups	472.046	331	1.426		
	Total	509.527	337			
PRQ5	Between groups	30.939	6	5.156	3.588	.002
	Within groups	475.641	331	1.437		
	Total	506.580	337			

The testing results in Tables 4–8 indicate that the *p*-value of the quality practices in the 'product quality' stage (PQ2, PQ3 and PQ4), 'process quality' stage (PRQ1, PRQ2, PRQ3, PRQ4 and PRQ5), 'system quality' stage (SQ2, SQ3, SQ4 and SQ5), 'total quality' stage (TQ1, TQ3, TQ4, TQ5, TQ6, TQ7 and TQ8) and 'business quality' stage (BQ1, BQ3, BQ4 and BQ5) are smaller than 0.05 (i.e. significant level); hence, the null hypothesis (Hypothesis 1) was rejected. It can be said that there was a significant difference among SME types on these quality activities.

Table 6 One-way ANOVA test result on implementation level – 'system quality' stage

		ANOVA				
		Sum of Squares	*df*	*Mean square*	*F*	*Siq.*
SQ1	Between groups	6.419	6	1.070	.802	.569
	Within groups	441.430	331	1.334		
	Total	447.849	337			
SQ2	Between groups	16.332	6	2.722	2.299	.035
	Within groups	391.929	331	1.184		
	Total	408.260	337			
SQ3	Between groups	66.608	6	11.101	8.732	.000
	Within groups	420.789	331	1.271		
	Total	487.396	337			
SQ4	Between groups	58.697	6	9.783	5.257	.000
	Within groups	615.968	331	1.861		
	Total	674.666	337			
SQ5	Between groups	36.084	6	6.014	4.867	.000
	Within groups	409.019	331	1.236		
	Total	445.104	337			

Table 7 One-way ANOVA test result on implementation level – 'total quality' stage

		ANOVA				
		Sum of squares	*df*	*Mean square*	*F*	*Sig.*
TQ1	Between groups	16.804	6	2.801	3.834	.001
	Within groups	241.776	331	.730		
	Total	258.580	337			
TQ2	Between groups	13.176	6	2.196	1.953	.072
	Within groups	372.140	331	1.124		
	Total	385.317	337			
TQ3	Between groups	25.554	6	4.259	3.803	.001
	Within groups	370.718	331	1.120		
	Total	396.272	337			
TQ4	Between groups	44.513	6	7.419	7.755	.000
	Within groups	316.670	331	.957		
	Total	361.183	337			
TQ5	Between groups	22.873	6	3.812	3.633	.002
	Within groups	347.331	331	1.049		
	Total	370.204	337			
TQ6	Between groups	30.922	6	5.154	4.221	.000
	Within groups	404.181	331	1.221		
	Total	435.104	337			

Table 7 One-way ANOVA test result on implementation level – 'total quality' stage (continued)

		ANOVA				
		Sum of squares	*df*	*Mean square*	*F*	*Sig.*
TQ7	Between groups	29.015	6	4.836	5.594	.000
	Within groups	286.136	331	.864		
	Total	315.151	337			
TQ8	Between groups	79.962	6	13.327	8.510	.000
	Within groups	518.334	331	1.566		
	Total	598.296	337			

Table 8 One-way ANOVA test result on implementation level – 'business quality' stage

		ANOVA				
		Sum of squares	*df*	*Mean square*	*F*	*Sig.*
BQ1	Between groups	33.194	6	5.532	5.797	.000
	Within groups	314.960	330	.954		
	Total	348.154	336			
BQ2	Between groups	15.027	6	2.505	1.525	.169
	Within groups	543.662	331	1.642		
	Total	558.689	337			
BQ3	Between groups	43.237	6	7.206	4.991	.000
	Within groups	477.887	331	1.444		
	Total	521.124	337			
BQ4	Between groups	46.524	6	7.754	6.301	.000
	Within groups	407.310	331	1.231		
	Total	453.834	337			
BQ5	Between groups	47.458	6	7.910	5.612	.000
	Within groups	466.542	331	1.409		
	Total	514.000	337			
BQ6	Between groups	31.714	6	5.286	4.079	.001
	Within groups	428.913	331	1.296		
	Total	460.627	337			

In the 'product quality' stage, repair services (4.24; 4.18; 4.35) have implemented quality practices such as in-process inspection (PQ2), autonomous inspection (PQ3) and improvement for failed products (PQ4) more often than any other types of businesses.

From the result obtained in the 'process quality' stage (Table 10), it is found that printing business have implemented quality practices more often than any other types of businesses (PRQ1, PRQ3, PRQ4 and PRQ5).

Table 9 Implementation levels mean score – 'product quality' stage

Quality practices	*Mean score*							
	Clothing	*Furniture*	*F&B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
PQ1	3.72	3.76	3.36	3.97	3.77	4.24	4.08	3.77
PQ2	3.58	3.41	3.17	4.24	3.83	4.24	3.81	3.64
PQ3	3.60	3.53	3.40	4.12	3.40	4.18	3.47	3.63
PQ4	3.96	3.78	2.88	3.71	3.63	4.35	3.39	3.71
PQ5	4.17	4.05	3.76	4.21	4.00	4.41	3.92	4.08

Table 10 Implementation levels mean score – 'process quality' stage

Quality practices	*Mean score*							
	Clothing	*Furniture*	*F&B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
PRQ1	3.78	3.13	3.12	4.03	3.53	3.82	3.86	3.56
PRQ2	3.42	2.85	2.95	3.41	3.13	3.53	3.14	3.18
PRQ3	2.59	2.32	1.88	3.24	2.33	2.71	2.42	2.47
PRQ4	3.33	3.37	3.12	4.12	2.77	3.24	3.72	3.38
PRQ5	3.27	2.89	2.71	3.79	2.87	3.18	3.06	3.10

According to the results in Table 11, among other business types, the repair services have the highest mean of implementation level (4.24, 4.53 and 4.29) in the 'system quality' stage. They consider that incoming control and supplier assessment (SQ2), elimination of all wastes (SQ3) and performance evaluation system of IPO (SQ5) are the three most implemented quality practices in this stage.

Table 11 Implementation levels mean score – 'system quality' stage

Quality practices	*Mean Score*							
	Clothing	*Furniture*	*F & B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
SQ1	3.81	6.68	3.45	3.44	3.80	3.76	3.64	3.68
SQ2	3.59	3.28	3.40	3.53	3.47	4.24	3.75	3.53
SQ3	3.77	3.04	3.52	4.35	3.37	4.53	3.92	3.64
SQ4	2.50	2.18	2.14	3.44	2.47	1.53	2.22	2.39
SQ5	3.72	3.53	3.07	4.26	3.57	4.29	3.56	3.65

In the 'total quality' stage (Table 12), printing and repair services have implemented quality practices (TQ1, TQ3, TQ4, TQ5, TQ6, TQ7 and TQ8) more often than any other types of businesses.

Table 12 Implementation levels mean score – 'total quality' stage

Quality practices	*Mean score*							
	Clothing	*Furniture*	*F & B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
TQ1	4.05	4.14	3.69	4.12	4.03	4.71	4.39	4.10
TQ2	3.43	3.42	3.19	3.88	3.70	3.18	3.31	3.44
TQ3	3.93	3.92	3.45	4.12	3.60	4.71	3.67	3.87

Table 12 Implementation levels mean score – 'total quality' stage (continued)

Quality practices	*Mean score*							
	Clothing	*Furniture*	*F & B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
TQ4	3.95	4.14	3.00	4.15	4.03	3.82	3.58	3.86
TQ5	3.56	3.61	3.02	3.88	3.47	4.06	3.28	3.53
TQ6	3.74	3.68	3.05	4.21	3.50	4.00	3.44	3.65
TQ7	3.88	4.00	3.33	4.41	3.80	4.47	3.97	3.93
TQ8	3.20	2.71	2.26	3.91	3.57	3.76	2.92	3.07

Most of the quality practices (BQ3, BQ5, and BQ6) in the 'business quality' stage were implemented by printing businesses.

Table 13 Implementation levels mean score – 'business quality' stage

Quality practices	*Mean score*							
	Clothing	*Furniture*	*F & B*	*Printing*	*Handicraft*	*Repair services*	*Others*	*Total*
BQ1	3.95	3.92	3.24	4.18	3.80	4.75	3.86	3.89
BQ2	2.91	2.81	2.69	3.21	3.10	2.29	2.61	2.84
BQ3	3.51	2.90	2.81	3.88	3.07	3.71	3.14	3.25
BQ4	3.66	3.73	2.69	3.68	3.40	2.71	3.36	3.46
BQ5	3.50	3.28	2.48	3.91	3.33	3.53	3.11	3.31
BQ6	3.37	3.23	2.57	3.71	3.00	3.18	2.94	3.18

5 Conclusions and implications

There are many researches about the comparisons of the implementation of quality practices, but usually in the medium and large companies. Very few researches discuss about the quality practices in micro, small and medium companies. The implementation level of the quality practices is also rarely discussed. This study has presented the results from the survey about the level of implementation of quality practices in Indonesian SMEs. The quality practices are developed based on five stages of quality management.

Based on the results, most of the SMEs accentuate more on the practices of the 'product quality' stage than other stages. The findings of the survey show that, overall, most of the SMEs are still in the early stage of implementing quality management. The other finding was that the most implemented of quality practices are printing and repair services. They have already translated what they perceived to be effective into practices. This is probably due to them having a good understanding and knowledge of quality practices even though most of them are still at the average level.

SME managers/owners who have the quality strategy on their agenda must know which quality practices should be improved. A wrong decision can be very expensive to the companies. Therefore, this study will help give information and serve as a guideline in making this decision for SMEs. By examining 29 quality practices in five quality management stages, the present study provides some guidelines for SME managers/ owners who want to evaluate their quality activities. Three least implemented of quality practices (smaller than 3) stand out as being improvement priority for Indonesian SMEs:

PRQ3 (2.47), SQ4 (2.39) and BQ2 (2.84). It means that there are no informal improvement team, operation of ISO 9001 and SWOT analysis in Indonesian SMEs. Hence, by focusing on these quality practices, an SME can build a quality improvement programme that will have a positive influence on the business performance. Other implications of this study are:

- SMEs must focus on the implementation of quality practices that can provide competitive advantage over other industries, especially large and foreign companies.
- Most of the Indonesian SMEs utilise only a partial implementation of quality management and, hence, are unable to achieve continuous improvement. Therefore, the owners should ensure that these quality practices must be implemented gradually to achieve optimal benefits for SMEs.
- The result of this study can also provide a baseline measure for the quality practices in SMEs. Thus, knowledge of this baseline can help in gaining continuous improvement in the performance of SMEs.

Overall, the level of quality practice in Indonesian SMEs was between 'partially implemented' and 'implemented'. Strong efforts should be made in encouraging SMEs to implement quality activities in order to improve their business process effectiveness and thus enhance their competitive advantage. Furthermore, the study provided a beneficial framework for evaluation of quality management implementation in Indonesian SMEs as measured by the survey instrument and assessed 29 quality practices for its successful implementation. These quality practices relate to perception of quality practices in five different stages. However, a similar study may be undertaken to other types of SME businesses and other areas that have not been covered in this study to evaluate the implementation of these quality practices, and hence may be a better area for further research.

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New factor of environment franchise and its influence on business performance of franchise outlets in food and beverage industry: case of Vietnam

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Abstract: Business performance of franchise outlets in the food and beverage industry is influenced by many factors including transfer, receipt, relation and environment. This study aims to clarify which factors and how the factors belonging to the environment franchise could influence the business performance of franchise outlets. Especially during the researching process, the authors found out that resident' advocacy – the new factor in this group – has a role in business performance. By using the Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM), the authors recognise that the new factor of residents' advocacy has the biggest influence among the environment factors.

Keywords: business performance; resident' advocacy; CFA; confirmatory factor analysis; SEM; structural equation modelling.

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1 Introduction

Nowadays, franchise model has been widening in the world, with various fields and careers creating tens of millions of labours working into the system. Franchising has become more and more important all over the world and it continues to contribute remarkably to the GDP of every nation. In the context of the present economic crisis, it is significant how this business model continues to have an effect on economies. One of the most popular franchise models is food and beverage business that contains a considerably larger proportion than other businesses in terms of turnover, profit and labour force. According to Entrepreneur (www.entrepreneur.com), six out of ten top brand names are from the food and beverage industry and four of these brand names from the top ten brands are the strongest brands all over the world (http://www.entrepreneur.com/franchises/toptenlists/index.html). According to Vietnam Ministry of Trade, there are approximately 90 franchise business transactions in Vietnam, whereas in countries such as Singapore and Indonesia, the number goes up to above 400 and it touches 1200 in the Philippines. Vietnam has about 200 franchise systems in operation. Most of them are foreign brand names in the food and beverage sector, such as KFC, Lotteria and Pizza Hut. A number of Vietnamese enterprises applied this model and initially had great success, e.g. Trung Nguyen Coffee, Pho 24, etc. Development history of franchise model

has showed that the role of restaurants, fast food or coffee shop systems, which always contain a very high proportion, high turnover as well as high labour force, and it is the same in Vietnam.

Fact shows that the development of systems of franchise outlets depends significantly on the business performance of each outlet. In the outlet level, business performance depends on many factors such as transfer, receipt, relation and environment. Although all these factors have an impact on the activities of the outlets, the authors focus especially on the role of environmental factors since they are the external and the most dynamic factor. Moreover, during the research process, the authors discovered and found out a new factor in this group, which is residents' advocacy. Thus, through our research method, we would like to clarify the role of this new factor as well as the other factors belonging to environmental factor group in influencing the business performance in the food and beverage industry. They are also the objectives of the study.

2 Theoretical framework and research model

According to previous researches, environmental factors are all of the external factors influencing operations of the franchisee outlets. Understanding the business environment can help franchisors as well as franchisee to be more active in any situation that could happen and then deliver proper policies and solutions in the franchising environment. During the researching period, the authors identified that the environmental concept is multi-pronged, including location, legal, media, market demand and residents' advocacy.

Location is the site where a franchisee chooses to set up a franchise outlet. In order to achieve effectiveness in business activities, the location should be in a favourable place (Hunt, 1972; An, 2007; Phong, 2008; Trung et al., 2011; Trung et al., 2012). In addition, the franchisee should take more time to carefully consider the location before franchising (Trung et al., 2013).[1]

Legal is the legislation and regulation of the government of the nation where the franchisor is conducting operations. In the broadest sense, the legal environment includes the system of laws, law explanation, law enforcement and law awareness of the citizens. Kavaliauske and Vegeniene (2011) indicated that legislative factors influence the franchise system establishment and development. Other authors such as Hunt (1972), Kaufmann and Kim (1995) and Grunhagen and Mittelstaedt (2005) also mentioned the importance of the legal factor in their study in improving the role of this factor in business performance and development of the franchise outlet system.

The market demand: the demand for food service of customers is reflected through the preferences, trends and consumption. Market demand is expressed through a stable level, not affected by season (Phong, 2008). In addition, customers who use the service are concerned about the pricing policies and the decoration of the store. Feltenstein (2001) showed that among eight factors that affect the success of the franchise model, market demand factors expressed through the strategic development of the business model, the franchisor, competitiveness of products, industry experience and the experience of the franchisor in franchise operation are very important. Some other authors such as Stanworth and Smith (1991), Mendelsohn (2004) and Monroy and Alzola (2005) also evaluated factors in which market demand is one of the important factors for the business performance of franchise outlets as well as the successful development of the outlet system in the area.

Media is one of the factors in the environment that affects business performance of franchise outlets, including the means and ways of conveying information to the customers. Media helps the franchise system become strong in terms of franchise brand and finance (Berger and DeYoung, 1997), allowing the franchisor to increase the number of stores at the national or international level because they can easily penetrate into new markets with a distribution channel at a very low cost (Sherman, 2004). In addition, the communication programmes carried out for chain outlets not only bring benefits for the franchise, but also promote the development of all branches in the whole system, help each branch reduce marketing costs significantly compared with single marketing since the branches share this kind of cost (Trung, 2008).

Residents' advocacy is satisfaction and approval of local residents in the areas where the franchise outlets operate. During the survey process, the author recognised that the activities of the outlets are partly influenced by the attitudes of the local residents. They may react against loud music from the outlets and the motorbikes parked on pavement and deliberately obstruct customers coming to outlets. Therefore, the author added the residents' advocacy variable in the environment factors as a base of data collection and verification process.

The operational performance of an organisation is a highly integrated indicator (Cavusgil and Zou, 1994). Thus, the business performance of a firm can be measured through quantitative data such as revenue, profit and percentage of market share. In addition, this indicator is measured by the performance of the implementation of organisational strategies such as expanding markets, achieving strong position in the market or simply the level of interest from market or consumer for product companies (Julian and O'Cass, 2003). In the food and beverage sector, measuring the business performance of the outlet can be based on revenue, profit or the existence time of the outlet. Naturally, the franchisees will not continue do business if they do not achieve the expected level of performance. However, collecting data relating to revenue or profit of an outlet is not simple because the interviewees are usually the outlet owners, who are not easily accessible. Furthermore, when the interviewer asks questions related to business performance, it makes the outlet owners uncomfortable, so they are often evasive or provide inaccurate information.

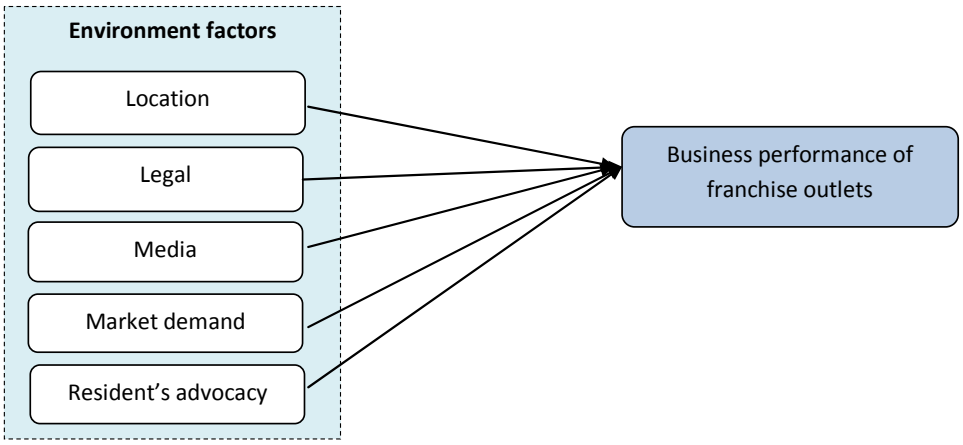
Besides, accessing all outlets of all franchise systems in one area is a huge task for the researcher. Therefore, to measure the business performance of franchise outlets, the researchers proposed measuring indirectly through other values as follows.

First is the direct opinion of the interviewees regarding the effectiveness of their business operations as well as their satisfaction about joining the outlet operation. When they think the outlet is operating really well, it means that they achieve the expected revenue and profit from operations of the outlet.

Secondly, it is measured through the existence of franchise outlet. If a franchise outlet operates effectively, they will survive over time (1 year, 2 years and 3 years, or even longer). This existence was a clue on the sales, costs and profits of this outlet. Good performance will help them feel more confident in enthusiastically recommending this business model to others. The performance of this action is the replication of the franchise system or, in other words, an increase of franchise outlet is an indication of the performance of each franchise outlet in this system.

The research model was built by the authors based on the theoretical framework.

Figure 1 Research model (see online version for colours)



3 Research method

In this research topic, the authors used a detailed exploratory mixed method. The research process was conducted through two stages: (1) preliminary research and (2) official research. Research objects were the franchise outlets in the food and beverage industry.

Preliminary research is implemented through qualitative methods including synthetic technique, analysing literature review, direct interview, bilateral interview or group discussion with experts and managers of franchise outlets.

Secondary data review was conducted on the theory of environment franchise and operation performance of the franchise outlets from books, textbooks, newspapers, internet and national and international special magazines. Discussions with experts were conducted through in-depth interview techniques with experts in the field of franchising. Focus group discussions were conducted with ten managers of the franchise outlets. The main purpose of this step was to discover, adjust and add the scale reflecting the environmental factors and business performance of the franchise outlets.

Based on secondary review and discussions with experts and managers of the franchise outlets, the environmental factor concept is built as a multi-pronged concept including five elements: location, legal, media, market demand and residents' advocacy. Location and legal measured were by three observed variables; media, market demand and residents' advocacy were measured by four observed variables. Business performance, based on the behaviour of the business theory (Tho and Trang, 2010, extracted from Cyert and March (1992), will be measured by three observed variables. All the observed variables are measured by a five-point Likert scale (ranging from '1: totally disagree' to '5: strongly agree'). Then, we asked ten franchise store managers again about the content and form of statements (questions) in the draft scale in order to fulfil the official quantitative research requirements. Moreover, the authors checked the fit of the words and grammar used in the statement in order to ensure consistency and clarity so that it is not confusing for the interviewees.

Official research is carried out by quantitative research methods. Direct interviews with the managers of franchise outlets belonging to franchise systems in the food and beverage industry in Vietnam were conducted through a questionnaire with stratified sampling method for the following three regions: North, Central and South Vietnam. Since the main data analysis method in this study is Structural Equation Modelling (SEM), sample size should be big to achieve the required confidence level. According to previous studies, when using SEM, the sample size should be at least 300–500. To have this sample size, 400 questionnaires were been distributed and 367 were returned, which amounts to 91.75%. After the data clearance process, 24 more questionnaires were eliminated. Thus, the final sample size is 343.

Data collected from 343 questionnaires corresponding to 343 franchise outlet samples were analysed by SPSS and AMOS software through analytical techniques such as descriptive statistics, the reliability scale test with coefficient Cronbach's α, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and SEM to test the research model.

4 Study results

4.1 Sample description

We surveyed 343 franchise outlet managers. The majority is from Lotteria franchise with 103 samples (30%), followed by KFC with 47 (13.7%), Trung Nguyen coffee with 34 (9.9%), Pizza Hut with 28 (8.2 %), Pho 24 with 24 (7%), Tous Les Jours with 13 (3.8%) and Coffee Bean & Tea Leaf with 7 (2%). The remaining franchises were surveyed in small quantities (<10 samples). In terms of the franchise model, the outlets built by the franchisors were the overwhelm majority with a total of 68.5%. The remaining 31.5% were built by the franchisees (or according to the franchise contract).

4.2 Scale preliminary evaluation

The Cronbach α coefficient is acceptable from 6.0 onward and the item–total correlation is higher than <0.3. The Cronbach α coefficient performance scales are as follows:

Location scales: the Cronbach α coefficient is 0.611 and the item–total correlations of all the observable variables are >0.3, so the observed variables in this scale were kept to run EFA.

Legal scales: the Cronbach α coefficient is 0.607 and the item–total correlations of all the observed variables are greater than 0.3, so the observed variables in this scale were kept to run EFA.

Media scales: the Cronbach α coefficient is 0.589; the observed variable TT3 has an item–total correlation value of 0.267, smaller than allowed (0.3). If this variable is removed, the Cronbach α coefficient will increase to 0.609 and the remaining variables (TT1, TT2, TT4) will have satisfactory item–total correlations (>0.3). Therefore, the Cronbach α analysis leads to the decision of removing the variable TT3 before running EFA.

Market demand scales: the Cronbach α coefficient is 0.502; the observed variable NC4 has an item–total correlation of 0.191, smaller than allowed (0.3). If the variable NC4 were removed, then the Cronbach α coefficient would be 0.508 and the item–total correlation of this variable would be 0.256, still smaller than allowed (0.3). Even if we

continue removing NC3, the Cronbach α coefficient does not improved; it is just .508, which is smaller than the allowed standard (0.6). Therefore, the authors decided to remove this scale from EFA.

Residents' advocacy scales: the Cronbach α coefficient is 0.288; the observed variable UH4 has an item–total correlation of –0.130, much smaller than allowed (0.3). This is the variables the authors added into the questionnaire to test the reliability of the information provided by the interviewees. Thus, it is very easy to see that if this variable is removed, the Cronbach α coefficient would increase to 0.619 and the remaining variables (UH1, UH2, UH3) would have satisfactory item–total correlations (>0.3). Therefore, the Cronbach α analysis leads to the decision of removing the variable UH4 before running EFA.

Business performance scale: the Cronbach α coefficient is 0.652 and item–total correlations of all the observed variables are greater than 0.3, so the observed variables in this scale were kept to run EFA.

Table 1 Cronbach's α testing results (final time) of the scales

No	*Scale*	*No of observed variables*	*Cronbach's α*	*Item-total correlations*
1	Location	3	0.611	0.364
2	Legal	3	0.607	0.367
3	Media	3	0.609	0.328
4	Resident's advocacy	3	0.619	0.402
5	Business results	3	0.652	0.429

4.2.1 EFA result

The EFA result shows that KMO coefficient = 0.869 (>0.5) satisfies the condition, and the significance of Bartlett's test is very small, so EFA is appropriate for exploring the real data. Besides, the total variance extracted was 63.266% (>50%), which satisfies the above conditions.

The EFA result also shows that the observed variables have factor loading coefficients smaller than 0.5, so this factor has been eliminated from the environmental factor group. So there are only three factors (eight observed variables[2]) representing the environmental factor group that influence business performance of franchise outlets in the food and beverage industry in Vietnam (location, legal and residents' advocacy).

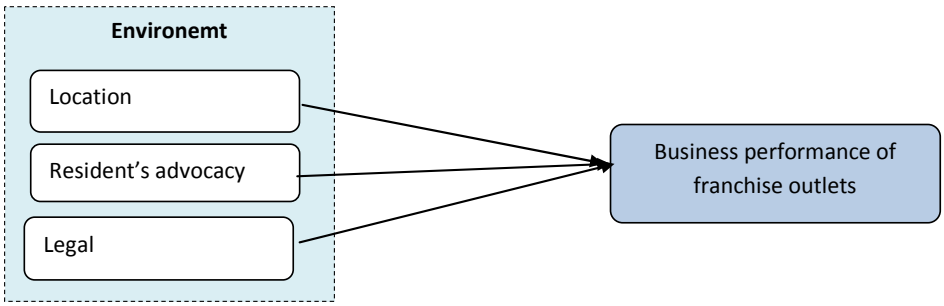
Table 2 Summary of factors after EFA analysing

No	*Factor*	*Variables*	*Interpretation*
1	Location	Q4, Q5, Q6	The franchisee selects convenient locations to open franchise outlets.
2	Resident's Advocacy	Q19, Q20	The positive behaviour shows the support of citizens and local governments at the franchise outlet locations.
3	Legal	Q7, Q8, Q9	Law, regulations and policies of the local authorities related to the operation of franchised outlets.

For the business performance of the franchise outlet scale, the EFA result shows that KMO = 0.653, the significance of Bartlett's test is equal to 0.000, the total variance extracted is 59.289% and factor loading coefficients are >0.7. This result shows that the concept on business performance is of single direction.

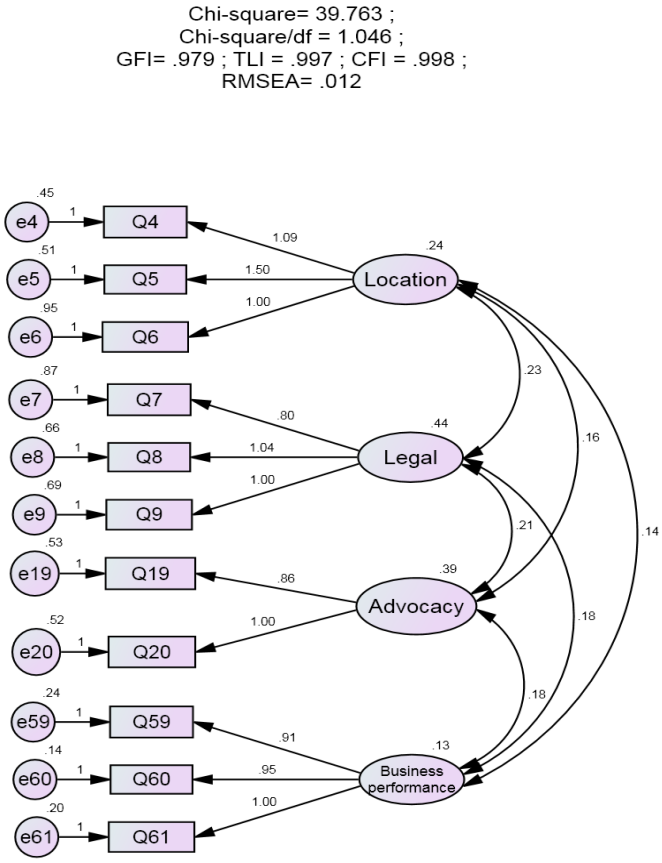
After EFA, we had factor groups from rotated factor matrix the authors conducted adjusting the research model.

Figure 2 The adjusted model (see online version for colours)



CFA is conducted with 11 observed variables. From the EFA result, three factors were extracted from the environmental scale and one from the business performance scale. These factors create a corresponding group scale to build a model measuring the concepts and undergo CFA analysis to find the proper model and market data.

Figure 3 CFA result of research model (see online version for colours)



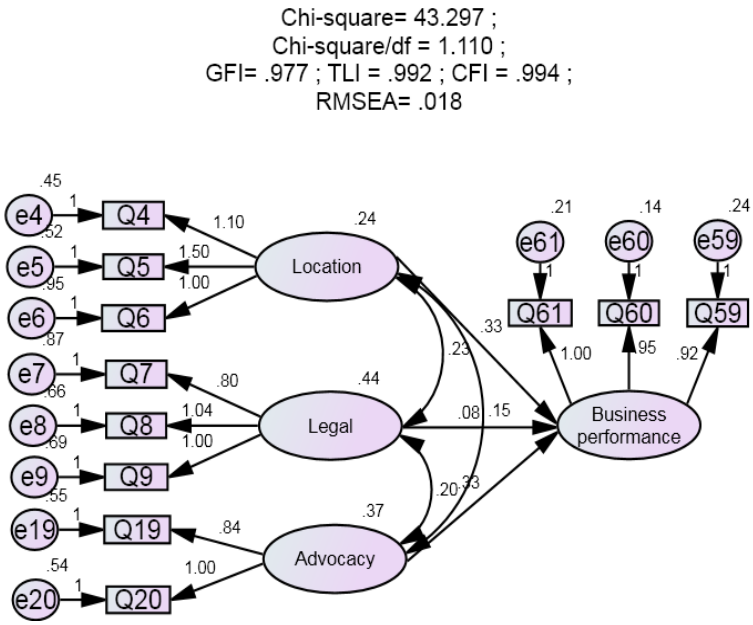
The CFA performance values shown in Figure 3 are as follows: TLI = 0.997 > 0.9; CFI = 0.998 > 0.9 (Bentler and Bonett, 1980); CMIN/df = 1.046 < 3 (Carmines and McIver, 1981); RMSEA = 0.012 < 0.08 (Steiger, 1990). Therefore, the model achieves the level compatible with the market data.

4.3 Testing result of research model

After conducting CFA, SEM is used to identify the factors affecting the business performance of franchise outlets and the affection level.

The SEM results shown in Figure 4 are as follows: CMIN/df = 1.110 (<3); TLI = 0.992 (>0.9); CFI = 0.994 (>0.9); RMSEA = 0.018 (<0.08). Thus, the model achieves the level compatible with the market data.

Figure 4 SEM result (see online version for colours)



The estimated numbers in Table 3 are all positive and have a statistical significance of $p < 0.05$. It shows that the factors (concepts) location, legal and residents' advocacy positively influence the business performance of franchise outlets. It also shows that the scales of factors meet the requirements on the theoretical relation value.

In addition, estimated result shows the affection levels of the factors on the business performance of the franchise outlets. Location and residents' advocacy affect the most (0.328), followed by the legal factor (0.078). Three factors can explain 40.5% variation of the business performance variable.

Table 3 Testing result of cause-effect relationship among the concepts of model

Relationship			*Estimate*	*p*
Performance	←	Location	0.328	0.020
Performance	←	Legal	0.078	0.027
Performance	←	Advocacy	0.328	0.000

5 Discussion

After researching and collecting and analysing the data, we found that 'location', 'legal' and 'advocacy' are the environmental factors significant to the 'business performance of the franchise outlets'. Of the three factors, 'location' and 'advocacy' are the most significant, followed by 'legal'. In addition, the analysis results also show that these factors will have a positive influence on the 'business performance of the franchise outlets'.

Media and market demands are also very important to business performance of franchise outlets. However, after an analysis, these factors are eliminated because the market demand scale depends on the existence and suitability of market demand for the products and services the franchise outlets offer. In fact, response to the market demand is the success key of any business model. However, the Cronbach α coefficient of this factor could not be satisfied since 235 outlets samples (68.5%) were built by regional franchisors. Hence, evaluating the media and market demand does not belong to a manager's duties. They just fulfil the requirement from franchisors and focus on operational effectiveness of franchise outlets. It may be caused by the 'eventually default' to such an extent that market demand is not prominent in the franchise model. The difference in this business model does not depend on the kind of food and beverage, but on the way the outlets process food and beverage, and the service style.

The research results show that the 'location', 'residents' advocacy' and 'legal' factors can explain only 40.5% of the variation of the business performance variable; the remaining 60% is explained by other external factors that do not belong to the research model. This happens because besides the environment factors, business performance is influenced by the transfer, receipt and relation factors.

6 Conclusion

Business location is one of the significant factors that have a huge influence of the business performance of the franchise outlets. In fact, the performance of a franchise outlet is measured by an analysis, according to which the 'location' factor has the greatest influence on the business performance of the franchise outlets. Therefore, choosing the business location keeping in mind the characteristics of the food and beverage sector is essential before putting into operation of franchise outlets. Just by looking at facts, we can also see that the largest franchise brands in Vietnam like

Lotteria, KFC, Pizza Hut and Kinh Do Bakery are located in the best locations, which are quite eye-catching. There are some important points that should be taken into consideration while finding and choosing a business location for franchise outlets.

First, in addition to conducting a market research, franchisors as well as franchisees need to simultaneously conduct a research and survey on where to set up an outlet. The outlet must be located in a convenient business location (on major roads, intersections, near market, near supermarket, etc.) with internal and external space (parking locations, convenient locations for customers can easily visit, etc.). In addition, rental costs also needs to be considered, because to open franchise outlets, the franchisees have to pay not only the initial franchise fee, but also a lot of other fees such as royalty fee and recurrent fees for marketing activities. Therefore, cost factor also needs to be focused on. Moreover, customers also need to be focused on; for example, the Tea Alo franchise outlets are located close to schools with the target customers being mostly young people, pupils and students.

Second, before deciding to start the business operation of an outlet, the franchisees need to carefully consider, maybe with the advice of the lawyer or law agency about terms in the franchise agreements, the time of opening the outlet, thereby reducing the pressure that these terms bring during the business location choice.

Doing business at the franchise outlet desperately needs the support of residents and local authorities; this new performance is also obtained from the performance of the research. Hence, there are some areas in which the 'advocacy' factor can contribute to the development of a franchise outlet.

To be able to get the support of the people, the franchise outlet must pay attention to the image of the outlet, such as not causing public disorder because of loud music, friendly and gentle attitude of the staff and hygiene regulations that meet the minimum requirements for sanitary surroundings. If an outlet located in a residential and the sound from the outlet is too noisy or there is unhygienic waste treatment, it will result in complaints from the residents.

When selecting business locations, they need to pay attention to the areas surrounding the outlets, such as sidewalks, parking areas or even electrical wiring, trees, water and electricity and consider whether these factors will hinder the activities of the other outlet as this will also affect the other outlets and adversely affect the future operations of the outlet.

7 Recommendations

Franchising is quite a new business activity in Vietnam. The actual franchise concept only legally recognised in Vietnam Commercial Law enacted in 2005, therefore, the legal elements of this legislation do not really go into practice for franchise operations in Vietnam. Therefore, the authors suggest the following recommendations.

For the franchisor. The franchisor needs to pay special attention to the intellectual property in Vietnam; intellectual property in Vietnam is relatively weak, especially in the matter of enforcement, concerning the issue of intellectual property rights. When legal issues are not addressed or are not yet effective, the franchisor can directly give specific terms of franchise contract.

A franchisor firm doing business in Vietnam should pay attention to the conditions in the legal environment. It is necessary to consult and take advices from the lawyers or the counselling office to be able to make a conscious decision to do business in a new market. If a food and beverage franchise that does not suit the tastes of consumers enters into business, then failure is inevitable.

For the franchisee. The franchisee must consider their financial resources and franchise knowledge. If not they do not have enough capital, then the sharing of capital, capital maintenance activities and fee details payable to the franchisor in order to provide a reasonable plan should be well planned, to avoid contractual disputes between the two parties later on. When they know the advantages and disadvantages that may be encountered, the contractual agreement will be more favourable.

Franchisees conducting open outlets, particularly in the food and beverages sector, should focus on issues of food safety, which causes many pressing problems in recent times with increasingly health-conscious customers. The matter of hygiene and food safety will affect the entire brand and business performance will be strongly affected. Requirements have to tracked and met and certification of food safety and hygiene is a must.

The franchisees and franchisors should regularly update the changes in the franchise law, take specified and detailed terms in the contract to avoid any disputes and making costly court settlements.

For the government and the authorities. Franchise activity is an activity related pretty much to intellectual property rights, such as trade secrets, trademarks, brand name and business slogan. Hence, law enforcement agencies need to focus more specifically on the issue of intellectual property, because intellectual property rights are weak in Vietnam and not be paid attention to until recently, when more and more famous brands have faced losses due to the intellectual property law being not paid enough attention to.

As franchising is a new but promising business model, the government needs to have support policies promoting the development of this business model such as the policy of preferential loans and taxes. In Vietnam, it is a very important for the state to encourage franchise associations as this will help bridge the gap between domestic and foreign enterprises, and foreign enterprises will be able to access the Vietnamese markets and the Vietnamese franchisees will have access to this form of trading, which is a more favourable way of trading. The effect of the establishment of a franchise association between Japan, Singapore, China and the neighbouring country Thailand (Trung, 2008) will be a valuable experience for Vietnam on the development of this effective business model.

Franchising helps attract and allocate risk more effectively for business investment and helps franchise systems grow their brand, finance and create conditions for economic development. Franchising contributes not only to the development of domestic enterprises and reducing risk in the economy, but also to promoting economic development and reducing unemployment and social evils in countries like Vietnam. Therefore, the competent authorities in the areas where franchising business operates need to have policies that support these activities, such as facilitating the infrastructure and settlement procedures quickly and effectively.

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Notes

1 National University's Research project on solution for development of franchise systems in the food and beverage industry in Vietnam, December 2013.

2 The EFA result has eliminated one observed variable (UH1) since it has a loading factor coefficient <0.5, so there are only eight observed variables measuring three factors.

How green firms appeal users with pop-ups and inline ads as an effective tool to distort their attitude

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Abstract: The internet industry makes a distinction between rich media pop-ups and inline ads marketing to offer great opportunities for green advertising and marketing activities supported by website advertising to allow green firms to directly convey messages to the consumers. This integration is a significant base for e-marketing. The service companies in Taiwan have adopted various e-marketing techniques like pop-up and inline advertisements. Pop-up advertisements are seen in high-traffic websites. Since there is an increase of environmental concern for consumers and the government of Taiwan, it is of great significance for advertisers to understand the precise differences between general advertising and green advertising by employing pop-up and inline advertisements and how to approach the two differently to achieve the desired effect. This research paper is an attempt to study the effectiveness of pop-ups and inline advertisements among Taiwanese online consumers.

Keywords: green advertising; consumer attitudes; general advertising; appealing; Taiwan.

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1 Introduction

Companies across the world are brainstorming into innovative methods to add value and to attract and retain customers. The key to competitive advantage lies in the ability to create compelling differences. Companies and green firms have both adopted various e-marketing strategies like employing pop-ups, inline, banner advertisements, etc. These techniques have their focus on targeting multiple customer segments at once. Depending on the cost of technique, reach to the audience and returns, companies adopt such techniques to earn a better Return of Investment (ROI).

According to previous studies, online advertising has grown significantly since its beginning in 1994. China and Taiwan have the highest number of internet users in the world. Hence, online advertising opens up a door for companies to communicate with customers and potential customers by employing pop-ups, inline ads and other online media to win over the market and customers (Hofacker, 2000), which would be helpful for them in promoting sales in the fiercely competitive market. Meanwhile, the advertiser should consider how the consumers will interpret and respond to an ad (Belch and Belch, 1998), as consumers are on the receiver side of the communication.

Pop-ups and inline advertisements are designed to link with the most frequently visited websites. When the surfer opens the website, pop-up advertisements appear automatically as a separate webpage. When users click on these pop-up advertisements, they will be navigated to a different website. The aim of pop-up advertisements is to divert traffic to the desired websites. This paper is an attempt to find the effectiveness of pop-up and inline advertisements among Taiwanese online consumers and if they distort their attitude.

With increased interest towards and awareness of environmental issues among Taiwanese consumers, their demands on what constitutes value in advertisements have also changed. General advertising is often regarded as a rather unwelcomed intrusion and a source of irritation by consumers and a common reason is that many advertisers have over-dramatised or even spread false claims about products, causing great scepticism among consumers. With the increase in the number of environmentally minded consumers, it is of great importance for advertisers to understand the particular differences between general advertising and green advertising and how to approach the two differently for desired effect. This study is going to find out if there are certain factors perceived to be more important in green advertising than in advertising in general and how it could affect current techniques used by advertisers in the area of environment-friendly products.

2 Statement of the problem

The aim of this study was to explore why and how internet advertising will have an impact on consumers' attitudes by deploying pop-ups and inline ads as the medium to convey messages and promote products to Taiwanese consumers, which can be summarised as follows:

1 to find the differences between the ways Taiwanese consumers react to advertisements with green messages;

2 to explore why current methods of internet advertising are becoming inadequate;

3 to explore what technologies are allowing the changes to occur.

3 Literature review

3.1 Attitudes towards advertising in general

Consumer attitudes towards advertising in general have long been found to be negative. Zanot (1981), for instance, found that attitudes towards advertising became increasingly negative after the 1970s. Early surveys of consumer attitudes revealed somewhat positive results. Gallup Organization (1959) found that a majority of respondents liked advertising and found it to be informative. Bauer and Greyser (1968) reported that more people held favourable attitudes towards advertising. The trend changed after 1970. Harris and Associates, Inc., for example, found that a majority of respondents considered TV advertising to be seriously misleading (Papacharissi and Rubin, 2000). Later studies have provided more evidence of the unfavourable public attitude towards advertising (Mittal, 1994).

More recent studies have focused on attitude structures. Elliot and Speck investigated six major media (TV, broadcasting, magazines, newspapers, Yellow Pages and direct mail) and found that television and magazines exhibited the highest level of ad-related communication problems (hindered search and disruption) (Elliot and Speck, 1988). Perceived clutter, hindered search and disruption were related to less favourable attitudes and greater ad avoidance. These effects varied in different media. The differences in the way different media affect consumer attitudes were also reported by Bogart (1990). Television ads often have a higher degree of irritation than radio ads, which are less irritating because radio programmes usually serve as background music, but so far, there has been no attempt to better understand the public attitude towards pop-ups and inline ads.

3.1.1 Green advertising

Green advertising is here understood as the promotion of a product or brand that has environmental claims. It is an advertising that addresses the relationship between the product and the biophysical environment. The above-mentioned marketing tools are more precisely known as instruments of the 'marketing mix'. Marketing means the process of planning and executing the conception, pricing, promotion and distribution of ideas, good and services to create and exchange value, and satisfy individual and organisational objectives. When firms have defined the goals and objectives and have identified the target group and market position to be defended, they have to decide on the tools of

marketing plan to be used. Advertisers in Taiwan are facing a constant battle to break through the clutter and reach the consumers' attention with their advertising. Ads appear daily and everywhere in a consumer's life: in newspapers and magazines, online, on the TV, in the cinema and even in mobile phones. The competition for attention has become massive and companies are using all means necessary to attract the attention of the consumers (Kotler and Keller, 2009).

The most favourable way used by marketers and advertisers to get consumers' attention is advertising, which helps consumers to elaborate their knowledge about product attributes and specifications (Buda and Zhang, 2000). Connolly and Prothero (2003) define green ads as appeals that try to fulfil consumer needs and aspirations. Dimensions to be considered here is commercially focused, which is developed to increase the sales of products.

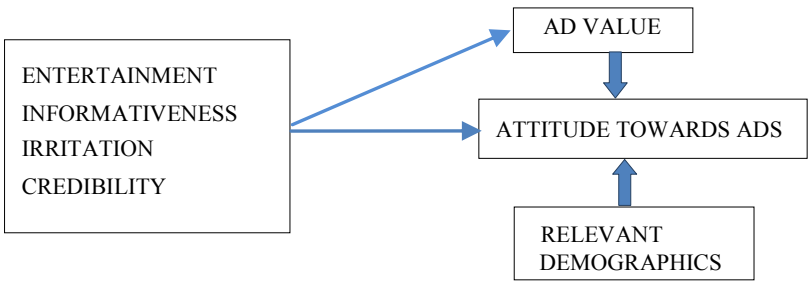
3.1.2 Attitude towards internet advertising

The emergence of the internet as a new medium for communication and advertising has motivated a substantial amount of research that focuses on online or internet marketing (Robinson et al., 2007). It has also driven studies on attitudes towards internet advertising in the web-based environment. Because of the interactive nature of the internet, some surveys report that respondents viewed internet advertising as more informative and trustworthy than a demographically similar sample found in general advertising; since internet has become a communication platform, frequent use of internet advertising emerges naturally (Chaffey et al., 2006).

The content (informativeness) and form (entertainment) of ads are important predictors of their value and are crucial to the effectiveness of online advertising, This development is closely linked to the recognition that the internet is a retailing platform capable of attracting and maintaining customers (Shiu and Dawson, 2002). Along with entertainment and informativeness, irritation caused by advertisements also influences people's attitude towards them. This is consistent with earlier research findings that interesting and pleasing ads have a positive impact on consumers' attitudes towards a brand (Shimp, 1981). Schlosser et al. (1999) reported that attitudes towards internet advertising are affected by enjoyment, informativeness and the ad's utility in making behavioural (purchasing) decisions.

In order to study how the above factors affect consumer attitudes towards internet advertising, Bracket and Carr modified several attitude models of internet advertising (Ducoffe, 1995; Ducoffe, 1996) and developed an integrated web advertising attitude model.

Figure 1 Ducoffe extended model



Consumers' attitudes towards pop-ups and inline green advertising are coupled with feelings and judgments formed when they are exposed to an advertisement which will trigger consumers' attitudes and emotion towards the advert itself and their beliefs regarding the brand or the environment-friendly product, as portrayed by Batra and Ray (1986). Therefore, it is very important to investigate the differences between consumers' distortion responses, which can be defined as consumers' emotion from ad exposure. A consumer's distortion response is also regarded as cognitive response, which is a consumer's judgement on an ad. Attitude towards an ad is defined as 'a learned predisposition to respond in a consistently favourable or unfavourable manner towards advertising in general'.

3.2 Research framework

Taking a reflection about the past studies and the recent literature about attitudes towards internet advertising and consumer behaviour models, a research framework is constructed to enumerate the factors affecting consumer attitudes towards pop-ups and inline advertisements and the relationships between attitudes, emotion and intention to view internet ads, and users' actual behaviour. Attitude, intention, emotion and behaviour are four major constructs in the theory of reasoned action proposed by Fishbein and Ajzen in the early 1970s (later extended to become the technology acceptance model in management information systems research). The model links individual beliefs, attitudes, intentions, emotions and behaviour to describe the psychological process that mediates the observed relations between attitudes and emotions (Fishbein and Ajzen, 1975).

In the two types of internet advertising, emotion is usually considered to be a major factor that may affect attitudes. Ads with contents including incentives are considered to have an impact on consumer intentions to visit company site advertisements under a given attitude. Emotion then affects their actual advertisement receiving behaviour and triggers their attitude. Authors modified the model by merging it with the hierarchy of effectiveness model.

With the help of hierarchy of effectiveness model, consumer's behaviour can be divided into six steps after consumers have watched an online advertisement: awareness, knowledge, liking, preference, conviction and purchase (Lavidge and Steiner, 1961). The steps may be summarised as being aware of the existence of the product, searching for related information on the website, getting more knowledge of it, beginning to like it and developing a passion for it, ensuring the purchase and finally giving an emotional response. From the existing literature about attitudes towards advertising and consumer behaviour models, a research framework is constructed to illustrate the factors affecting consumer attitudes towards pop-ups and inline advertisements, and the relationships between attitudes, intention to view green advertising ads and users' actual behaviour. Attitude, intention and behaviour are three major constructs in the theory of reasoned action proposed by Fishbein and Ajzen in the early 1970s (later extended to become the technology acceptance model in management information systems research). The model links individual beliefs, attitudes, intentions and behaviour to describe the psychological process that mediates the observed relations between attitudes, behaviour and emotions. Among the three types of constructs of green advertising, emotion and permission are usually considered to be major factors that may affect attitudes (Batra and Mayers, 1992; Hair et al., 1998).

It's also known that the constructs being expressed in previous studies by Brackett and Carr (2001) and Ducoffe (1996) have proven to be relevant, the distinction between advertising value and advertising attitude is not exposed clearly. As the matter of fact, other studies in this category do not make a distinction.

An approach to understanding the relationship between consumers' needs and advertising value is to take the use and gratification perspective. This approach assumes audience members to be active gratification seekers who interact with the media rather than become passive recipients of media content (Williams et al., 1997). Their media use is considered a conscious effort to fulfil either cognitive or affective needs, or psychological motives, such as information learning, entertainment, personal identity, para-social interaction, companionship and escape (Blumler, 1979; Katz, 1974; Rubin, 1981; Rubin, 1983). The merit of this approach is in explaining users continuing to be under media exposure by answering the questions of why people choose to attend to particular media or types of content/messages, what satisfaction they expect and get, and to what uses they put the results of their attention to media (McGuire, 1974). It also helps explain varying viewing levels and viewing gratifications (Levy and Windahl, 1984). Palmgreen and Rayburn (1982) has related it to the 'expectancy-value' approach which proposes that a particular kind of media content will have attributes which derive a negative or positive valuation for the audience. After the relevant attributes are identified, respondents can be asked how they value each attribute.

3.3 Extension of constructs

While the constructs identified by Ducoffe (1996) and Brackett and Carr (2001) have proven to be relevant, the distinction between green advertising value and advertising attitude is not clear. In fact, other studies in this area do not make a distinction. We use attitude as a dependent variable and consider the antecedents of advertising value as factors of attitude in our framework. We also believe that there are more factors that come into play, especially in the internet environment. These factors may help further distinguish the internet environment from traditional media. Specifically, this paper examines the two other factors in addition to those proposed by Ducoffe (1996) and further validated by Brackett and Carr (2001). Figure 2 depicts our theoretical framework of Taiwanese consumers on how they perceive advertisements channelled via pop-ups and inline ads.

Figure 2 Factors contributing to behavioural psychology towards attitude

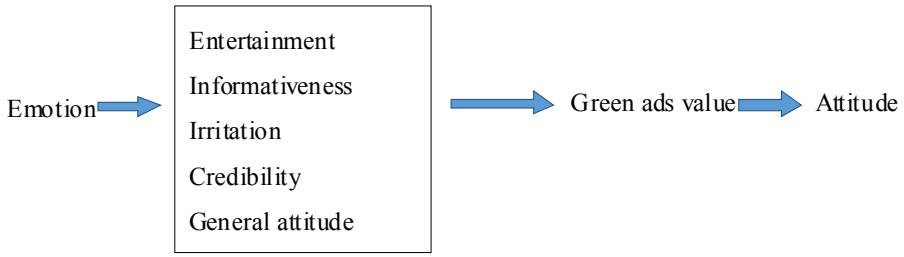


Figure 1 depicts our framework of consumer's perception on green ads. Emotions affect the perceived values on five factors. These five factors are expected to affect advertisement attitude within both the traditional general advertising and web-based environment but with different degrees of being retained or perceived.

From the framework hypotheses, we developed the following hypotheses:

Hypothesis 1: The perceived entertainment, informativeness, irritation, emotions and credibility of internet ads affect the attitude towards pop-ups and inline advertising.

Hypothesis 2: Consumer attitudes are different for green promotional pop-ups and inline ads, and general pop-ups and inline internet advertising.

Hypothesis 3: Attitudes towards pop-ups and inline advertisements with green message contents affect consumer intentions to receive pop-ups and inline ads.

4 Methodology

The research is of a quantitative nature, aimed to measure the attitudes and to explore the differences in attitudes among consumers. Existing advertising theories were employed, borrowed and then put into a new context of green advertising in accordance with ads value. We also presented potential causes for the findings, making the study to take on a slight interpretivistic approach as well. The sampling of our research was based on an empirical research conducted in 2013–2014 to find the effectiveness of pop-up and inline advertisements in Taiwanese consumers and to see if they had any impact on attitude distortion. There were 380 respondents that included universities student in Taiwan. Due to incomplete response, four questionnaires were not included. Finally, a sample of 336 respondents was chosen for study after omitting the outliers.

4.1 Deductive and inductive research orientations

With the purpose of the thesis being to create an understanding of consumers' attitudes towards green advertising in the forms of pop-ups and inline ads, the chosen research approach is a combination of a deductive and an inductive approach. The deductive aspects relate to a structured approach where one collects quantitative data and where the researcher is not in any way related to the area of research. We have carefully designed and developed a quantitative study in the form of a questionnaire, in which closed statements were used as a mean to collect the data. Further, Saunders et al. (2009) suggest that the data must be able to explain the causal relationships between different variables and generalise a final conclusion. The goal of the study was not only to create an understanding, but also to test hypotheses relating to attitudes towards green advertising to be able to explain any existing or non-existing relations between different factors. Hypotheses' testing is a common approach in a deductive research method (Saunders et al., 2009).

The alternative and second part of the chosen research orientation for the thesis is the inductive approach, commonly used when the researcher acquires an understanding within the research subject and where the researcher is actually a part of the study (Saunders et al., 2009). Since we have been inspired by previous studies within the field, but in different research contexts, an inductive approach is suitable. For instance, Ghauri and Gronhaug (2010) suggest that with the use of the inductive approach, a researcher can make final assumptions and conclusions on previously made investigations.

To conclude, the thesis we have decided upon uses a combination of two research orientations. This is so because many previous studies possess a certain amount of previous knowledge and experience on the studied subject and an understanding of the old and new research contexts, which are often considered to be related to the deductive research approach. In addition, our orientation is also affected by the study since the proposal fit the profile of the targeted group. In other words, the influence of an inductive approach can also be spotted, since we are not fully detached from the study, which is normally the case for a clean deductive research orientation (Saunders et al., 2009).

4.2 Research approaches

There are several research approaches to choose from, depending upon the nature of the study (Ghauri and Gronhaug, 2005). An exploratory approach is often used when the problem may be tricky to pinpoint or fully comprehend and where the researcher lacks information on the subject. Saunders et al., (2009) explain this type of research rather simply by saying that it is a type of study that tries to find out "what is going on" and that it involves the seeking of information relating to a certain problem. Ghauri and Gronhaug (2005) also suggest that this type of approach combines various methods of data collection, for instance observations, gathering of information and trying to find reasons for, or explanations to, findings within the studied area. When looking upon what an actual situation is like and when the researcher already has some knowledge and information about the chosen area, the research is often addressed as a descriptive research.

In this type of research, data collection can take the form of surveys or interviews where structured questions are used to collect the necessary data (Ghauri and Gronhaug, 2005). Lastly, there is a third approach that can be used, namely the explanatory approach. Williamson (2002) suggests that this approach is often used to explain the underlying question of why something is the way it is and includes the study of possible correlations between variables, often done by running statistical tests (Williamson, 2002; Saunders et al., 2009).

This particular research includes a descriptive and exploratory research approach, with the main data collection taking place through an electronically distributed questionnaire. The goal of the study was focused not only on creating an understanding of consumers' view towards green advertising in e-marketing, but also on testing hypotheses generated from results by previous studies and finding possible correlations between the examined factors, namely entertainment, irritation, credibility, informativeness and advertising value. This was done by creating hypotheses based on previous results, to test whether or not they can be related to the new research context of this particular study. With this in mind, we believe that a descriptive approach, relating to the goal of examining the attitude held by Taiwanese consumers, and the exploratory approach, focusing on explaining possible correlations between findings, gaining an idea of what is going on, would prove to be a suitable combination of approaches to fulfil the purpose of the study.

4.2.1 Quantitative and qualitative research

Saunders et al. (2009) suggest that there are two types of methods that can be used to collect data, namely quantitative and qualitative methods. Data that are collected and can

be analysed by statistical tests and calculations not involving any in-depth analyses are related to what is known as a quantitative research method (Williamson, 2002). On the other hand, there is the other type of research called qualitative research that often takes place through interviews and types of in-depth focus groups. Data received through qualitative research will be subject to interpretation, where the goal of the researcher is to find useful patterns to explain a certain issue or phenomenon (Saunders et al., 2009; Auberbach and Silverstein, 2003). When looking upon the purpose of the particular study, we found the quantitative research approach to be most fitting, which could also provide the research with enough data to make a generalisation regarding the findings (Malhotra and Birks, 2007).

4.2.2 Collection of data (primary data)

There are two types of data that can be collected for a study: primary data and secondary data (Adams et al., 2007). Primary data are collected for the particular problem related to the current research at hand, whereas secondary data relate to data that have been collected for other purposes (Malhotra and Birks, 2007; Adams et al., 2007). For quantitative data collection, structured questionnaires distributed to a sample of a population can provide useful information regarding the respondents' behaviours, intentions, attitudes, awareness, motivations and demographic and lifestyle characteristics (Malhotra and Birks, 2007). For this study, we decided to electronically distribute a questionnaire to the targeted population, as this seemed most appropriate to fulfil the purpose of the thesis. Additionally, the use of a questionnaire is not only time and cost efficient, but can also be easily distributed to a large amount of respondents, where the respondents can manage to answer questions without assistance (Williamson, 2002). This is also one of the reasons why it has an influence on the decision on which data collection technique is to be used since the study has particular time limitations. With the purpose of the study and research objectives in mind, the quantitative technique is regarded as the most suitable technique.

4.2.3 Questionnaire

The targeted population for the questionnaire consisted of Taiwanese consumers. The questionnaire was made public and distributed electronically, using personal email, online surveys and Facebook accounts. The participants were asked to spread the link of the questionnaire further, to increase the number of responses. Coolridge (2000) suggests that the higher the number of respondents in a quantitative study can determine whether a sample is representative of the overall population, and this is the goal of the study at hand. No survey can achieve success without a well-designed questionnaire. Unfortunately, questionnaire design has no theoretical base to guide the marketing researcher in developing a flawless questionnaire. All the researchers have to follow a lengthy list of dos and don'ts borne out of the experience of other researchers, past and present. Hence, questionnaire design is more of an art than science. We applied the five-point Likert scale, as it is a suitable scale for measuring attitudes among a population (Williamson, 2002).

4.2.4 Coding of statements

The questionnaire was electronically distributed. The Qualtrics and SPSS program automatically coded the opinion-related statements. This means that the different responses were coded 1–5 on the Likert scale, depending on the response. For certain attribute statements, we had to code the different statements manually.

5 Results

The SPSS software was employed in analysing the data collected from questionnaires. The mean value, standard deviation and descriptive and factor analyses were adapted to measure and compare different answers. Other kinds of analysis indices were also applied, such as Cronbach's alpha and Pearson's correlation.

5.1 Data reliability

The attitude data were first tested for reliability using Cronbach's alpha to assess data reliability. The results are shown in Table 1. Most research method guides treat a value higher than 0.7 as acceptable. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct, and construct is the hypothetical variable that is being measured (Hatcher, 1994). Scholars starting with, Hair et al. (1998), recommended use of data reliability; furthermore, the values in the table indicate that the data collected from the survey are reliable and suitable for further analysis and can give the best expected results. Cronbach's alpha is used to measure the correlation between the variables and get the reliability of the results. Reliability coefficient normally ranges between 0 and 1.

Table 1 Data reliability

Constructs	*General attitude*	*Negative attitude*	*Positive attitude*
Entertainment	0.8209	0.9220	0.8946
Informativeness	0.7176	0.7957	0.8944
Irritation	0.7599	0.8040	0.7637
Credibility	0.7019	0.7052	0.7106
General attitude	0.8757	0.8958	0.8836

5.2 Factors affecting attitudes

The average respondent score on overall attitude was 2.76 on a five-point Likert scale, with 1 being strongly disagree and 5 strongly agree. This is below the neutral score of 3 ($t = 6.8$, $p < 0.001$), which implies that respondent attitudes towards pop-ups and inline advertising were negative. As to the question of whether emotion has any effect, the data in Table 2 indicate that general pop-ups and inline ads containing promotions ads for environment-friendly products (green ads) result in a positive attitude, whereas general pop-ups and inline ads generate a negative attitude. The difference between promotion-based advertising and general pop-ups and inline ads is statistically significantly ($t = 19.5$, $p < 0.001$).

Table 2 Mean and standard deviation

	N	*M*	*SD*
General attitude	380	2.76	0.69
Negative attitude	380	2.41	0.69
Positive attitude	380	3.27	0.64

A correlation analysis indicates that all four attributes without demographics which were used just for filtering the best respondents of pop-ups and inline ads are significantly related to the overall attitude towards general advertising (results are on Table 3). Entertainment, informativeness and credibility are positively correlated to the overall attitude, whereas irritation is negatively correlated to the overall attitude. This is consistent with previous findings.

Table 3 Correlation

	Entertainment	*Informativeness*	*Irritation*	*Credibility*
Informative	0.659**	–		
Irritation	–0.480**	–0.444**		
Credibility	0.590**	0.604**	–0.438**	
General attitude	0.675**	0.592**	–0.500**	0.636**

Note: **For two-tailed test, we found that correlation is significant at the 0.01 level.

Since the attributes are themselves significantly correlated, a stepwise regression analysis is used to differentiate their individual contributions. The results indicate that entertainment is the major factor that affects the overall attitude, with a marginal contribution of 45.5% of the variance. Credibility is the second most important attribute, but its marginal contribution to explain the variance is only 8.7%, which is substantially lower than that of entertainment. Irritation and informativeness have marginal contributions of 1.9% and 0.6%, respectively. Table 4 shows the results. In summary, the results indicate that:

1 Consumer attitudes towards pop-ups and inline advertising are generally negative, but are positive if green promotion ads message is included.

2 Entertainment is the most important attribute affecting consumer attitudes towards the use of pop-ups and inline advertising. Therefore, Hypotheses 1 and 2 are supported.

Table 4 Regression

Factor	β	R^2	ΔR^2	*t*	*p*
Entertainment	0.675	0.455	0.455	17.76	0.000***
Credibility	0.365	0.542	0.087	8.46	0.000***
Irritation	–0.163	0.561	0.019	–4.08	0.000***
Informativeness	0.115	0.568	0.006	2.36	0.019*

Notes: *$p < 0.05$; ***$p < 0.001$.

5.3 Relationship between attitudes and emotion

When the respondents were asked about their willingness to receive pop-ups and inline advertising, 129 of them responded with positive response and 207 responded with negative response (see Table 5). A multivariate analysis indicates that overall attitude is significantly correlated to emotion (t = 11.3, p < 0.001). When the respondents were asked about their willingness to receive pop-ups and inline advertising if they contain a message with green products, such as electric scooter ads, the answers were 188 'positive response' and 148 'negative response'. A χ^2 test between general attitude and green message content-based ads shows that the effect of providing ads with environment-friendly content is statistically significant at p < 0.001. Hence, Hypothesis 3 is supported. Attitudes towards pop-ups and inline advertisements with green message contents affect consumer intentions to receive pop-ups and inline ads. In simpler terms, it can be stated as providing pop-ups and inline advertisements with green message contents can increase the emotion to receive, retain and review these advertisements, hence attitude distortion.

Table 5 Contingency table

	Yes	*No*	*Total*
General ads	129	207	336
With green message content	188	148	336

Notes: χ^2 = 43.8; p < 0.001.

5.4 Relationship between attitude and behaviour

The analysis also looked at behaviour after receiving pop-ups and inline advertisements. Behaviour is measured by the extent to which an ad would be read (ranging from fully read to not read) and the timing for reading the message after receiving it (ranging from immediately reading it to ignoring it). Tables 6 and 7 show the results. Respondents who were willing to receive these ads tended to read the messages in full and tended to read them immediately, but those whose intention was not to receive these ads tended to ignore and not read the received messages. The correlation between the extents of message reading and attitude is statistically significant (t = 8.77, p < 0.001). The correlation between the timing of reading a received message and intention is also statistically significant (t = 5.86, p < 0.001).

Table 6 Extent of message reading

Emotion response	*None*	*About1/4*	*About1/2*	*About 3/4*	*Full*	*Total*
Yes	47	67	36	8	49	207
No	4	16	22	8	79	207
Total	51	83	58	16	128	336

Table 7 Frequencies of message reading

Emotion response	*Ignore*	*Click too many*	*Delayed click*	*Immediately*	*Total*
Yes	70	3	48	86	207
No	11	0	33	85	129
Total	81	3	81	171	336

5.5 Conclusion of the results

The aim of this study was to explore why and how internet advertising will have an impact on consumers' attitudes by deploying pop-ups and inline ads as the medium to convey their messages to Taiwanese consumers. According to the research results, there is a real danger of damaging customers' perceptions and attitude towards a firm's brand and appeal by providing poor online experience unless the content relates to the web content.

a To find differences between the ways Taiwanese consumers react to advertising with green advertising messages.

- Users feel that their intelligence is being insulted because of the suggestion that they cannot find what they are looking for themselves.
- Users feel imposed upon because sometimes they have no choice but to act in order to get rid of the advertisements diverting their attention.

b To explore why current methods of internet advertising are becoming inadequate.

- Users are particularly irritated by pop-ups which are not related to the site, as there is no real or useful reason for them to be there.

c To explore what technologies are allowing changes to occur.

- Green firms and advertisers can attain a better ROI by switching from pop-ups and inline ads format to more effective alternatives.

6 Discussion

Conclusively, it is also clear that pop-up ads are considered to be more intrusive than inline ads. Users seem to prefer not to be interrupted from their searching task, diverting their attention towards closing the pop-up windows containing ads. Apart from that, the content of the pop-up and inline ads is found to have impact once they carry an environment-friendly promotion. Overall, in a study on impact of green firms using online advertising to trigger consumer attitude, the outcomes of the online survey conducted with over 336 respondents showed that internet users have almost the same perception towards the pop-ups and inline advertisements. At the same time, they agreed that the strategy used for advertisements is a very informative and modern advertising strategy, but still these advertisements create irritation and annoyance although the same advertisements have an interactivity sense. We found that the respondents are very impressed with green messages but with a wee bit about the medium used by green firms, indicating there is a need to improve their advertising strategy.

7 Managerial implications

We wish to present suggestions for managerial implications based on the results of the study, but feel the need to express our awareness of the rather weak results. Either way, based on the findings, we wish to suggest the following:

- To avoid causing scepticism among its consumers, and to improve their perception of being credible, advertisers must provide certain levels of information relating to the beneficial aspects of the product, which can be related to the findings of the 'new' factor of certainty.
- When dealing with environmental claims, the use of complicated and scientific language often misleads the consumer, causing a perception of trickery, and could lead to irritation among consumers.
- In order to fully examine and understand the varying attitudes among a population, psychographics may provide more useful and accurate information that could help implement a more specific marketing communication approach.

8 Suggestions for further research

During the process of the study, we developed a deeper understanding of the subject and began to examine the findings from a new angle, after experiencing several limitations of the current research design. As previously mentioned, we believe the study to be possibly viewed as a pre-study, for a much more extensive and profound study. However, we have a list of recommendations that should be considered by anyone interested in making a similar study.

1 We believe an increase in the size of the study population would generate more reliable results, and potentially indicate more visible differences.

2 Attitudes towards a specific green product, or for instance green products found in a particular industry, should be examined. Also, adverts found in different media, to examine differences in perception of green appeals, need to be looked at.

3 While creating adverts, what needs to be included or not included should be decided on before being displayed as pop-ups or inline ads. This would mean that the viewers of the ad would have no previous perceptions or attitude towards the ad, or the brand. This could provide interesting results, indicating findings with no risk of previous perceptions influencing the attitude of the viewers.

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The relationships among agility empowerers from the viewpoint of gaining competitive advantage

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Abstract: The purpose of the present paper is to identify the mutual influence (influencing and being influenced) of organisational agility empowerers from the viewpoint of gaining competitive advantages. The research is of descriptive type, and the statistical population consists of 50 managers of auto-parts manufacturing companies in East Azarbaijan province, Iran. For this purpose, from among the managers and experts of the manufacturing companies under study, 50 people were chosen and polled. For data collection, researcher-made questionnaires were used, the validity and reliability of which were confirmed through content validity, calculation of Spearman correlation coefficient and test–retest methods. In order to analyse the data, the researchers used Student's *t*-test and DEMATEL method. The results indicate that the components' 'responsiveness and flexibility' have been identified as having the highest rate of being influenced, and the components' 'speed and competency' have been recognised as the most influential ones.

Keywords: agility empowerers; DEMATEL approach; agility dimensions.

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1 Introduction

In the changeable conditions of today's world, it has become evident that the only competitive advantage of an organisation in the future is that the managers find out how to learn earlier than their rivals, which is the very meaning of agility. Organisational agility is of increasing importance in today's changeable world. Most of the connoisseurs claim that the most successful organisations of the future are those that are more agile. With the increase in the changes within the work environment and by its becoming more competitive, organisations need a production system through which they can respond to all needs of the customers. Consumers always demand products with higher and more variable utility, and they desire to receive them as quickly as possible (Carlson and Yao, 2008). The present organisations are acting in an environment of rapid changes which require them to possess flexible strategies. In fact, the question of how organisations can succeed in a dynamic and unpredictable environment is an issue that is known as the most important challenge of the present day. Although some solutions such as timely production, re-engineering, virtual organisations and networking have been introduced, organisational agility is the most popular one. In such environments, agility has become a significant capability that has numerous effects on the performance of the organisation (Ravichandran, 2007, pp.5–10). Organisations need to expend resources in order to realise this goal. Since the management in each organisation is after the optimal use of the resources as well as the minimisation of its costs, identifying organisational agility empowerers and prioritising them can affect organisations' becoming agile by expending a small amount of their resources. On the other hand, gaining agility in an organisation calls for having agility empowerers that can assist that organisation in realising this important matter. To sum up, every organisation should possess some agility empowerers in order to attain agility, for it is the existence of these empowerers that directly influences the ability of the organisation to respond rapidly and effectively to the dynamic and unpredictable changes in the organisational environment. In this regard, the present research aims to answer the question: 'Which one of the organisational agility empowerers has the highest priority in the auto-parts manufacturing companies of East Azerbaijan Province?'

2 Review of literature

Agile production is a new term which shows the capabilities of an organisation in confronting constant changes and leads to lower production expenditures, increased market share, satisfying consumer needs, facilitating and accelerating the presentation of new products, eliminating the activities lacking value added and increasing the organisation's competitive power in production (Qumer and Henderson-Sellers, 2008, pp.2–11). In other words, in the present-day environment, every organisation should have the ability to simultaneously produce different and less durable products, to redesign products, to change production methods and to react effectively to the changes so that it can be called an "agile organization" (Pan and Nagi, 2004, pp.1–9). Agility is the result of awareness about changes in a comprehensive sense (recognising chances and

challenges) in both internal and external environments, and with the existence of an efficient capability in using the resources to respond to these changes at the right time and in a flexible manner relevant to the ability of the organisation to implement them, it takes an effective shape (Braunscheidel and Suresh, 2009, pp.6–9).

The most important factor in organisational agility is having the capability of taking decisions and executing them rapidly. In order to increase the speed, it is necessary that the power of decision-making be transferred to the lower ranks as far as possible, and all decision-making powers should be clearly specified. Furthermore, in order to increase organisational agility, the agility of the operations which are directly related to the customers is more important than that of the other operations. Thus, to begin with, it is a good idea to use sections such as sales and marketing (Sull, 2010, pp.1–5).

Since the early 1990s, the paradigm of agility has been put forward as a solution to managing the environmental dynamism as well as a strategy for empowerment in maintaining competitive advantage in a turbulent environment. Agility is associated with the organisation's ability to encounter unforeseen changes and to take advantage of changes, turning them into chances; it can bring about the success of organisations in gaining profit and market share as well as attracting customers (Zhang and Sharifi, 2007). Organisational agility considers several basic capabilities such as responsiveness, competency, flexibility and speed. The four basic dimensions of agility comprise satisfying customers, contributing to the promotion of competition level, getting organised to overcome changes and uncertainty, and the influence of information and personnel. In Table 1, some of the most important definitions of agility have been presented.

Table 1 Different definitions presented for agility

Presented definition	*Reference*
Customer agility is the rate of sensitivity and rapid responsiveness to customer-oriented chances in line with innovation and performing competitive activities.	Roberts et al. (2009)
Agility is the successful application of the components of the competitiveness, such as speed, flexibility, innovation and quality by integrating the rearrangeable resources and the best measures to supply customer-oriented products and services in an environment full of rapid changes.	Lin et al. (2006)
Constant preparedness for the rapid encounter with changes with regard to high quality, economical components and environment.	Conboy and Fitzgerald (2004)
Innovative productions for unstable demands.	Stratton and Warburton (2003)
Identifying the needs, rapid response, flexibility and coordinated operations.	Aitken et al. (2002)
Capability of survival and progress in an unpredictable, ever-competitive and changing environment through rapid and effective response, taking customer needs into account.	Maskell (2001)

Table 1 Different definitions presented for agility (continued)

Presented definition	*Reference*
Responsiveness towards customers with regard to market turbulence and by taking lean thinking principles into account.	van Hoek et al. (2001)
Confronting unforeseen changes to survive the threats of the environment and benefit from the change as a chance.	Sharifi and Zhang (2000)
Ability to respond rapidly to the changes of demand volume and demand variety.	Christopher (2000)
Agility is the rapid and active adjustment of the organisation's elements with the unforeseen changes.	Kidd (1994)

In spite of the large number of definitions for agility, none of them contradicts the others; all definitions indicate the idea of 'speed and change in the business environment'.

Besides the above-mentioned points, several studies have been done in the field of organisational agility, some of which are as follows mentioned here.

Aviles and Webb (2012) in their research specified that agility, based on speed, flexibility, competency and responsiveness, can enable organisations to compete in international markets at the right time; it can also capture the market in an effective way. Ramesh and Devadasan (2007), too, have considered organisational structure, entrusting, physical conditions of production, personnel status, contribution of the personnel and conditions of productivity as the criteria for organisational agility. Lin et al. (2006) concluded that the driving factor of agility is the changes and those agile organisations, in order to confront changes, need such capabilities as responsiveness, speed, flexibility and competency. Crocitto and Youssef (2003) in their research came to the conclusion that responsiveness, flexibility and speed are effectively related with management, personnel, customers and suppliers.

Reviewing the literature on agility and the related researches indicates that there is no isolate set of agility empowerers that can reflect all dimensions of agility (Lin et al., 2006). Thus, in the present research, by combining connoisseurs' viewpoints and ideas, the researchers have divided agility empowerers into four groups, and the research has been based on ranking agility empowerers.

- *Responsiveness.* Responsiveness refers to the ability to recognise changes and respond to them rapidly. The ability to respond appropriately can be considered an important privilege in gaining competitive advantages.
- *Competency.* Competency is a vast set of abilities that ensures the productivity of the activities in attaining the goals of the organisation as well as achieving competitive advantages in the target market.
- *Flexibility.* This means the ability to produce and present various products and reach different goals using equal resources and equipment. In other words, flexible organisations are those that show the highest rate of compatibility with the complicated environmental processes and competing markets.
- *Speed.* Speed is the ability to perform operations within the shortest possible time. Speed, as a main factor, has a key role in the competitive process of the target market as well as in obtaining the highest value in producing and service-giving activities.

Finally, the indices of agility empowerers from the viewpoint of gaining competitive advantages in the target market are presented as shown in Table 2.

Table 2 Indices of agility empowerers from the viewpoint of gaining competitive advantages in the market

Agility empowerers	*Index*
Competency	Having a strategic approach
	Suitable hardware and software technology
	Product quality
	Cost-effectiveness
	High rate of introducing new products
	Managing change
	Personnel's knowledge and competency
	Effectiveness and efficiency of operations
	Internal and external coordination
	Integration
	Sensing, perceiving and predicting changes
Responsiveness	Rapid and immediate response to the change
	Creation, reform and improvement of change
	Flexibility in product volume
Flexibility	Flexibility in product variety
	Flexibility of organisation
	Flexibility of personnel
	Rapid supply of new products to the market
Speed	Rapid and on-time delivery of products
	Speed in operation time

3 Tools and procedure

The statistical population includes all automotive parts manufacturing companies in East Azarbaijan, Iran. For this purpose, 50 subjects were recruited from the staff of automotive parts manufacturing companies having at least one of the following conditions:

1 top level, middle level and operational level managers;

2 experts with at least 5 years' experience.

The above-mentioned survey was based on identifying organisational agility empowerers in manufacturing firms as well as representing impressible and effective agility empowerers in the studied companies. The number of respondents with the above conditions was 50. To examine the first research question, the five-point Likert scale was designed and developed. To investigate the second question also, a questionnaire in the form of paired comparisons was designed to determine the type and severity of the

impact of empowerers on each other [0, 4]. To investigate the validity of this questionnaire, content validity method was used, while the Cronbach alpha coefficient and Spearman correlation coefficient were used to determine the reliability of the first and second questionnaires. In order to calculate the Cronbach alpha coefficient, the first questionnaire was distributed among ten members of the target population. After data collection, SPSS software was used to calculate the Cronbach alpha coefficient. The results are presented in Table 3. To calculate the Spearman correlation coefficient, the second questionnaire in two consecutive two-week time integers was used for the ten people and the correlation coefficient was equal to 0.87. The results indicate that the reliability of the questionnaire is appropriate.

Table 3 Results of the reliability of testing the questionnaire

Organisational agility empowerers	*Cronbach alpha coefficient*
Responsiveness	0.79
Flexibility	0.75
Speed	0.87
Competence	0.89
Organisational agile empowerers	0.82

Finally, for the purpose of research, the prepared questionnaire was distributed among the members of the target population. Therefore, first the data were collected and summarised and included in the study. Next, their normality was investigated. To test the normality of the obtained data for the research variables, Kolmogorov–Smirnov test was used. Also, *t*-distribution (equation 1) was used to test organisational agility empowerers:

$$t = \frac{\overline{x} - \mu}{\frac{s}{\sqrt{n}}} \tag{1}$$

The DEMATEL method was used to investigate the second research question and determine impressible and effective indicators among the auto-parts manufacturing companies in East Azarbaijan, Iran. These methods are described in brief in the following sections.

3.1 DEMATEL method

The DEMATEL technique is among the various decision-making methods based on pair-wise comparisons in which expert judgment is used to obtain the system factors and its systematic structure using the principles of graph theory, hierarchical structure of the system as well as correlations between the mentioned impressible and effective elements so that the impact of these relationships is given as a numerical score. Acceptance of inalienable relationships and the ability to display all possible feedbacks are among reasons that this method prevails over other methods based on graph theory. In the studies, various steps are used to apply the DEMATEL method. Steps of the DEMATEL method include the following:

First step. This technique should be used with the help of one of the idea creation methods among experts, such as brainstorming, think writing, Delphi or conference, to provide a list of the factors affecting the problem studied in terms of the expert group opinion.

Second step. The factors and criteria in the previous step will be used to prepare a survey matrix, so that the rows and columns of the matrix represent the same criteria. The experts are asked to determine an initial matrix (unfilled) with paired comparison and represent the effect of each measure on the other measures so that these numbers entail the following concepts:

(0) Factor A has no effect on factor B.

(1) Factor A has little effect on factor B.

(2) Factor A has an effect on factor B.

(3) Factor A has a great effect on factor B.

(4) Factor A is highly effective on factor B.

Third step. Matrices obtained from the third step are collected and decision will be made on the presence or absence of a relationship between two factors by the majority of experts vote.

Fourth step. The mean scores given by the experts to direct the relationship of the effect of row factor (A) on the column factor (B) for each of the relationships established in the previous step are determined.

Fifth step. With regard to the third and fourth steps, matrix $\hat{M}$, which shows the intensity of effect dominating the direct relationship in the system, is formed.

Sixth step. The linear sum of the entries of the obtained linear sums is specified; the maximum value is called α. By multiplying α by matrix $\hat{M}$, the 'matrix M', which shows the intensity of the relative effect dominating the direct relationships within the system, is obtained, i.e.

$$M = \alpha \times \hat{M} \tag{2}$$

Seventh step. Matrix $M(I - M)^{-1}$, which indicates the relative impact dominating the direct and indirect relationships in the system, is calculated.

According to the existing rules in graph theory, the sum of the direct and indirect effects of the vertices on each other with regard to all possible feedbacks may be the sum of an infinite geometric progression; then the matrix S is equal to

$$\begin{aligned} S &= M + M^2 + M^3 + \ldots M^t = \frac{M\left(I - M^t\right)}{\left(I - M\right)}; \lim_{t \to \infty} M^t = 0 \\ \Rightarrow S &= \frac{M}{\left(I - M\right)} = M\left(I - M\right)^{-1} \end{aligned} \tag{3}$$

Eighth step. Possible intensity of indirect relations (from existing elements on each other) is calculated using the following formula. This intensity is obtained by reasoning similar to the above reasoning from the sum of the following geometric progression:

$$S' = M^2 + M^3 + M^4 + \ldots M^t = M^2 \left(I - M\right)^{-1}$$
$$\lim_{t \to \infty} M^t = 0 \tag{4}$$

Ninth step. The sum of rows (R) and columns (J) of the entries of matrix S is calculated:

$$R = \sum_{i=1}^{n} S_{ij}, j = 1, 2, \ldots, n; \quad J = \sum_{j=1}^{n} S_{ij}, \ i = 1, 2, \ldots, n$$

Then $R + J$ and $R - \mathrm{J}$ are obtained.

Tenth step. A Cartesian coordinate system is formed so that its longitudinal axis ($R + J$) and transverse axis are scaled based on ($R - J$) and the position of each of the coordinates of a point A: ($R + J$, $R - J$) is determined. The diagraph drawn in the fifth step is transferred to this coordinate system to draw up a simple graphical view of the final structure of the system (Lo and Chen, 2012; Chun, 2012).

Finally, the factors in the lowermost parts of the diagram are more intensely affected by other factors. In other words, these factors can be overcome by removing many other challenges in the model. In a similar condition, factors in the uppermost part of the diagram are more intensely affected by other factors.

4 Findings

To conduct Kolmogorov–Smirnov and Student's *t*-tests, the questionnaires designed in a Likert scale were distributed among all 50 members of the study population and the data were collected. In data normality test, the null hypothesis is that the data distribution is assumed to follow a normal distribution, while converse hypothesis is contrary. In Student's *t*-test, due to each item having five points, the mean difference of each of the variables is considered 3. Therefore, for each of the hypotheses, H_0 and H_1 are as follows:

$$H_0 : \mu \leq 3$$
$$H_1 : \mu > 3$$

Finally, by data analysis using SPSS software, the obtained results are given in Table 4.

Table 4 Obtained results of Kolmogorov–Smirnov test and first research question testing

Symbol	*Organisational agility empowerers*	*N*	*K-S*	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*95% confidence interval of the difference*	
								Lower	*Upper*
P	Power of accountability	50	1.281	.061	9.875	49	.000	.4066	.6832
F	Flexibility	50	1.341	.055	8.337	49	.000	.9231	1.1826
S	Speed	50	.825	.520	7.653	49	.000	.1089	.2150
C	Competence	50	1.115	.018	12.828	49	.000	.8354	1.1130

According to Table 4, the significance level (sig.) of all the variables was greater than 0.05. Therefore, it can be said that the distribution of data obtained from the questionnaire survey is normal. Moreover, Student's *t*-test results show that at 95% confidence, it can be argued that the powers of responsiveness, flexibility, speed and competency are a part of organisational agility empowerers.

In order to identify impressible and effective agility empowerers in the studied companies, the second questionnaire and Delphi methods were used to determine all possible paired relationships between components and the intensity of the relationships of expert groups. Following data collection and obtaining a large majority of $\left(\frac{n}{2}+1\right)=\frac{50}{2}+1=26$ as collective judgment measure for the type of relationship between two components, first a diagraph like the relation among the components is obtained (Figure 1). Then, in order to determine the intensity of the finalised relationship (through consensus), the statistical population were asked (by consensus) to score in [0, 4] integers in the form of the same questionnaire in order to determine the severity of possible relationships between the components of the study where zero indicates no relationship and 4 indicates the maximum relationship between the two elements. Numbers between zero and 4, based on the ratio close to zero or 4, indicate the amount of intensity of the relationship. After collection of scores, the average of the obtained scores is calculated separately for each component, and the final score for the relations as the final output is given in Table 5 in the judgement of experts.

Figure 1 Diagraph of the influences of factors on each other

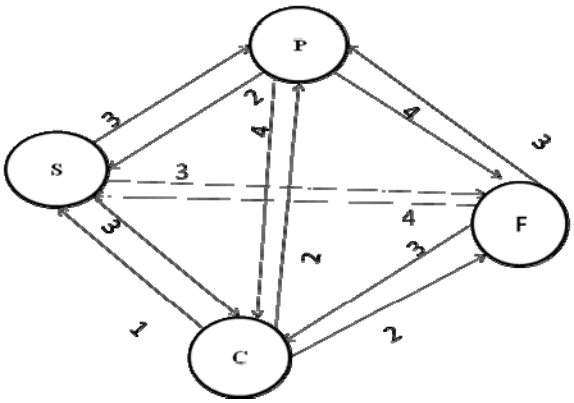


Table 5 Matrix of the intensity of interrelationships between components, with the sum of rows identified by experts

	S	*P*	*C*	*F*	*Sum of rows*
S	0	3	3	3	9
P	2	0	4	4	10
C	1	2	0	2	5
F	4	3	3	0	10

Following the DEMATEL technique process, the sum of rows of the intensity matrix of interrelationships between components (Table 5) was calculated and the greatest one was considered as $\alpha(0.1 = A)$. In the other, relative intensity matrix governing direct relations is obtained by multiplying α in Table 5. In other words, Table 6 is obtained based on equation (2).

Table 6 Relative intensity matrix governing direct relations (M)

	S	*P*	*C*	*F*
S	0	0.3000	0.3000	0.3000
P	0.2000	0	0.4000	0.4000
C	0.1000	0.2000	0	0.2000
F	0.4000	0.3000	0.3000	0

Based on the DEMATEL method, using equation (3), $S = M(I - M)^{-1}$, the relative intensity of the direct and indirect relationships was obtained (Table 7).

Table 7 Matrix of relative intensity of the direct and indirect relationships $M(I - M)^{-1}$

	S	*P*	*C*	*F*	*Sum of rows (R)*
S	1.0222	1.3676	1.5956	1.4728	5.4582
P	1.2624	1.2122	1.7475	1.6131	5.8352
C	0.7364	0.8738	0.8527	0.9410	3.4039
F	1.4085	1.4728	1.7183	1.3553	5.9549
Sum of columns (***J***)	5.3822	5.9141	4.9264	4.4295	

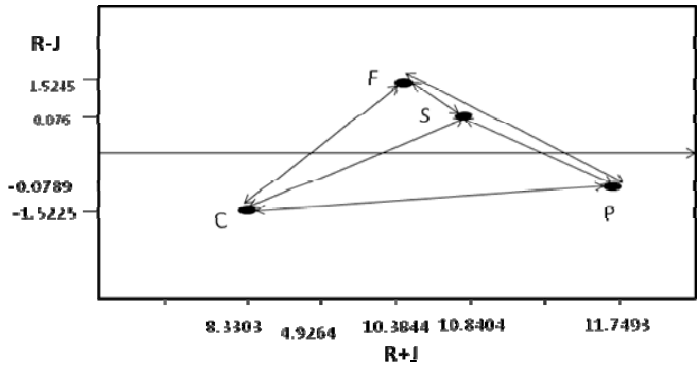
Considering the sum of rows and columns in Table 7, and sorting them in descending order, the ranking of being affected (effect) and effectiveness (cause) of indices is presented in Table 8.

Finally, the actual location of each component in the final hierarchy is determined by $(R - J)$ and $(R + J)$ so that $R - J$ indicates the position of an element (along the axis of widths) and this position, if positive, certainly will be effective and in the negative case will be affected by other components (receiver). Therefore, in this study, based on the output obtained from the DEMATEL method, the elements of S and F will definitely be effective, while P and C certainly would be affected by other components (permeable) (Figure 2).

Table 8 DEMATEL output method of the relationship between the relative intensity of the direct and indirect relationships

Order of components based on sum of rows	*R*	*Order of components based on sum of columns*	*J*	*Order of components based on R + J*	*R + J*	*Order of components based on R – J*	*R – J*
F	5.9549	P	5.9141	P	11.7493	F	1.5254
P	5.8352	S	5.3822	S	10.8404	S	0.076
S	5.4582	C	4.9264	F	10.3844	P	–0.0789
C	3.4039	F	4.4295	C	8.3303	C	–1.5225

Figure 2 Causal diagram of the measures



Another result of this study is in terms of determining the type and relative intensity of indirect relations between components obtained from equation (4). Recognition of the type and amount of indirect relationships between different components of the system indicates another aspect of the causal relations between components that are investigated in this study in the form of indirect effects between the studied indicators. Indirect relationship between the components is represented in Figure 3 and the intensity of the relationship between them is outlined in Table 9.

Figure 3 Indirect relations along with the relative intensity between elements

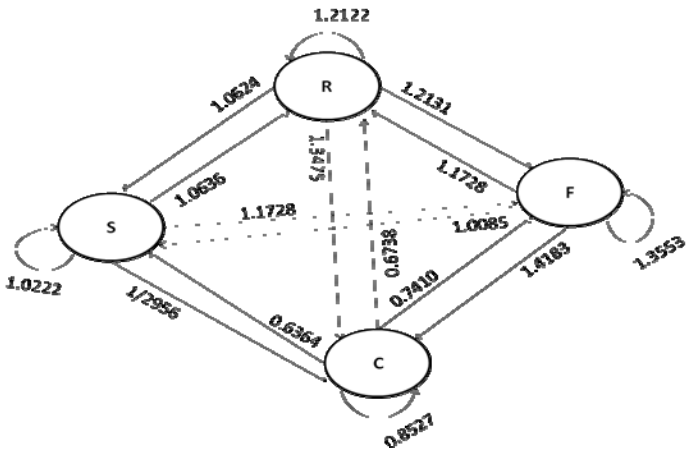


Table 9 Matrix of relative intensity of indirect relations $(M^2(I - M))^{-1}$

	S	*P*	*C*	*F*
S	1.0222	1.0676	1.2956	1.1728
P	1.0624	1.2122	1.3475	1.2131
C	0.6364	0.6738	0.8527	0.7410
F	1.0085	1.1728	1.4183	1.3553

As can be observed in Figure 3, each of the indicators of organisational agility empowerers indirectly has an impact on each other. Moreover, the amount of indirect influence of each component on other characteristics is clear. Considering Table 5, speed indicators (*S*) with speed intensity of 1.0222 and responsiveness (*P*) with intensity of 1.2122 and the two components of competency (*C*) and flexibility (*F*) with severity of 0.8527 and 1.3553, respectively, have an effect on each other.

5 Discussion and conclusions

As mentioned in the previous section, any organisation requires agility to survive and develop in today's turbulent and dynamic environment. Achieving agility in organisations, particularly manufacturing organisations, requires the system to have empowerers to help in the realisation of this important issue. It can be concluded that any organisation should have some empowerers under its ownership to gain agility. This is because these empowerers directly affect the organisation's ability to respond quickly and effectively to the dynamic and unpredictable changes in the organisational environment. However, there is no single set of instruments capable to reflect all aspects of agility. Hence, in this study, with the study of literature review and the results of the conducted research, empowerers are identified under the titles of responsiveness, competency, flexibility and speed. Meanwhile, during survey of managers and experts in automotive parts manufacturing systems in terms of gaining competitive advantage in the target market, the DEMATEL method is used to specify impressible and effective agility empowerers. According to the study results, it can be concluded that to make a productive change in the use of organisational agility empowerers in automobile parts manufacturing firms, priorities should be given to strengthening and upgrading the system's effective parameters such as 'speed and flexibility' because strengthening of these indicators leads to other strengthened organisational agility empowerers in the study population.

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An empirical analysis of materials' cost effect in the Malaysian housing market industry using deterministic method: case of Klang Valley

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Abstract: Materials are the essence of the construction industry. Material resource represents a substantial proportion of the total value of the project. Hence, this study is aimed at investigating materials' cost-related factors that cause an increase in housing market prices in the Malaysian construction industry. However, the scope of this paper is limited to investigations in the Klang Valley region only. There is a need to create a specific research model with the aim of identifying specific factors under the materials sector that also provide a more simplified divergent angle of reference. The proposed model is a 'hybrid' version derived from an existing model created by Carr which classifies materials' costs into two types: direct material cost and indirect material cost. It is proposed at the end of the research that material cost does have an effect on the rising price of house in Malaysia.

Keywords: direct material cost; indirect material cost; Malaysian housing industry.

Reference to this paper should be made as follows: Moorthy, R. (2015) 'An empirical analysis of materials' cost effect in the Malaysian housing market industry using deterministic method: case of Klang Valley', *Int. J. Trade and Global Markets*, Vol. 8, No. 3, pp.266–279.

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1 Introduction

Malaysia as a developing country has obtained benefits from the development of the housing industry (Jarad et al., 2010). The Malaysian housing development has continued

to fight in spite of various constrictions and restrictions (Agus, 1997). The housing industry has been using conventional development methods for many years, because of the increasing demand for better dwellings, the continuous changes in technology, the increase in the construction cost, the strict environmental policies, the concept of innovation, creation and state-of-the-art design, all of which have begun to find their place in the industry (Yusof and Abidin, 2007).

The government of Malaysia recognises that housing is a basic need for every citizen. It is also an important component of the urban economy. These have led to the method of policies and programmes aimed at ensuring that all Malaysians have the chance to obtain an appropriate place to stay and other related activities. Housing developments in Malaysia are carried out by both the public sector and the private sector, in terms of low-, medium- and high-cost houses.

The Malaysian government has also established a housing policy that focuses on the involvement of the private sector in housing production and delivery, especially in housing scheme development (Othman, 1999). In recent years, rapid economic development has resulted in an increasing demand for residential housing among urban areas in Malaysia. Reviewing the housing prices in Malaysia, the prices have appreciated dramatically whether in major cities or in smaller towns and depending on specific locations. Over the past ten years, the residential property market in Malaysia has experienced a significant price expansion throughout Malaysia, involving higher rates.

Under the cost of construction, materials have a significant relationship with the increasing cost as a whole. Building materials are the largest input into house construction, and therefore need to be available and affordable. This is a very critical issue where governments trying to provide low-cost houses have to be careful. Unavailability of affordable material can lead to incompletion of good low-cost housing projects.

Materials are the essence in the construction industry. Material resource represents a substantial proportion of the total value of the project. A material management system includes the major functions needed in construction projects, i.e. identifying, acquiring, storing, distributing and disposing of materials. Material planning may vary, depending on the project size, location, cash flow requirements and procedure for purchasing and inspection. Regular supply of the material in proper quantity must be ensured. It is extremely important because late or irregular delivery or wrong type of material delivered during construction is one of the major factors contributing to the delay of a project. Also, the effective utilisation of manpower can be greatly enhanced by ensuring proper and sufficient availability of material.

Hence, this study is aimed at investigating materials' cost-related factors that cause an increase of housing market prices in the Malaysian construction industry. However, the scope of this paper is limited to investigations in the Klang Valley region only.

2 Literature review

2.1 Materials' cost effect model

The price of housing determines the housing demands everywhere. For example, increasing housing cost will decrease the demand for housing. Fleming (1965)

drew a distinction between building (house or other building) prices and building costs by referring to building price as the market price for building works payable by a client and building cost as the cost incurred by a contractor in carrying out work.

Carr (1989) defined direct cost as the costs that are not counted if the activity has not been performed and indirect costs as the ones that would have occurred even if an activity had not been performed. Materials, labour and equipment qualify as direct costs because of their physical traceability to the construction activity, which has taken place, while project and general overhead, and perhaps profits, are indirect costs. Indirect costs also include those small costs that would be direct except that assigning them to activities is not economical (Carr, 1989).

Geltner and Miller (2001) described the former as direct costs of the physical components of the construction project such as land cost, labour, material and equipment, developer fees, construction management and overhead costs. The soft costs included cost of design, legal and financing. Tah et al. (1994) noted similar components of direct and indirect costs as Carr (1989) and Akintoye (2000), but the former has included subcontractors' costs as part of the direct cost and allowances for risk as part of the indirect costs.

Friedman (2005) mentioned that builders divided the cost of housing into two categories – hard cost and soft cost. Hard cost is the sum of money spent on acquiring the site and building the dwellings. Soft cost covers the amount spent on indirect expenses related to the execution and marketing of the project. Hard cost includes many components such as land cost, material costs, development costs (which include necessary utilities, roads, infrastructure in project site), labour costs and landscaping costs. Soft cost on the construction of a single home or the entire development includes many components such as financing, professional fees, marketing costs, overhead, taxes and profit.

Alaghbari (2005) has divided the factors influencing housing cost into five groups as follow: factors related to land, materials used, construction methods used, finishing works and other external factors influencing housing costs.

2.2 Theoretical framework

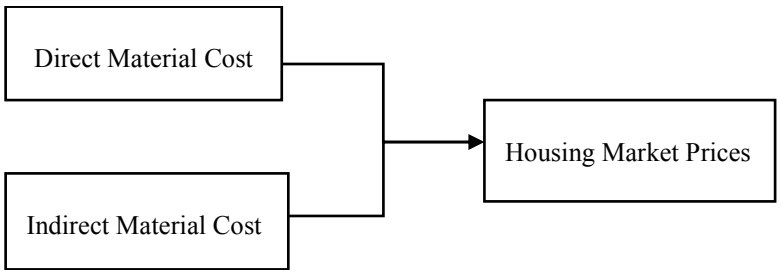
By combining insights from the above references, it has been proposed at the end of this chapter that there is a need to create a specific research model with the aim of identifying specific factors under the materials sector that also provide a more simplified divergent angle of reference. The proposed model is a 'hybrid' version derived from an existing model created by Carr (1989) which classifies materials' costs into direct material cost and indirect material cost. The classification of direct material costs has been proposed to be a compromise of three homogeneous factors. However, not much priority was given to the indirect material cost which is often considered the manufacturing overhead, which leads to the attempt of deducing the factors from cost accounting perspectives (suited to the nature of building construction sector). The proposed concept-specific model is as shown in Figure 1.

- *Direct material cost.* Direct materials appear in the design and can be touched, and direct material cost includes cost of delivery, storage, sales and other taxes, and losses. From another angle, it can be deduced as the quantities of material that can be specifically identified with a cost object in an economically feasible manner, priced at the unit price of direct material (Institute of Management Accountants). In a

manufacturing company, direct material cost is an element of inventory cost and of cost of sales. Differences in how companies define this term result in variations in the amount recorded as direct material cost and the amount recorded as overhead or expense.

- *Indirect material cost*. An indirect material cost is any material cost not directly identified with a single final cost objective, but identified with two or more final cost objectives or an intermediate cost objective. For reasons of practicality, any direct material cost of minor dollar amount may be treated as an indirect material cost if the accounting treatment is consistently applied to all final objectives, and produces substantially the same results as treating the cost as a direct cost.

Figure 1 The proposed materials' cost effect model (concept-specific model)



3 Research methodology

3.1 Proposed context-specific model

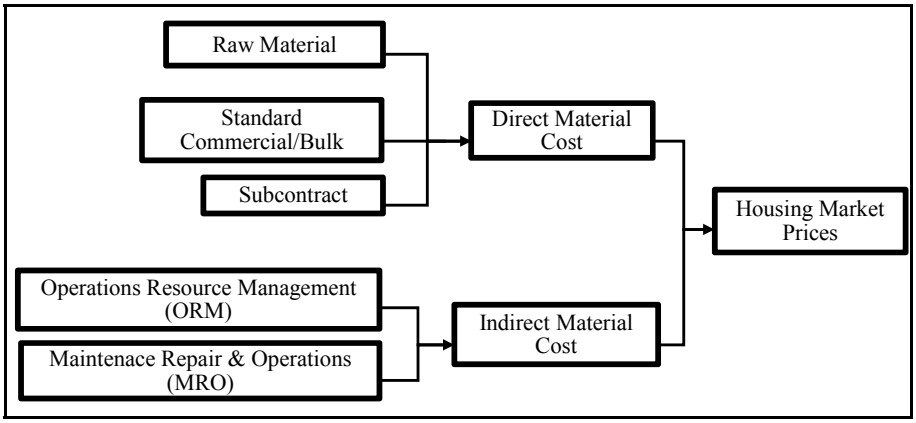
3.1.1 Model specification

Raw material. Raw material is the basic material from which a good product is manufactured or made, frequently used with an extended meaning. For example, the term is used to denote material that come from nature and is in an unprocessed or minimally processed state, e.g. fine sand, coarse sand, hand-broken aggregate, crushed stone aggregate for hard quality, brick aggregates, rubble, quarry spalls, white bella stone, screened rounded gravel, binding material, unscreened gravel, hard murrum, stone dust, fly ash brick, etc. Materials are anything made of matter, constituting one or more substances. Wood, cement and any other matter are all examples of materials. In this sense, materials are the parts required to make something else, from buildings and art to aeroplanes and computers.

We tentatively define good raw materials as follows: raw materials include constructed or fabricated materials that will receive direct labour before they are turned into another state. A schedule of rates for all items of work is maintained in the form of a printed book known as Schedule of Rates (SOR). In this research, construction raw material rates are as per the SOR. These rates are helpful in preparation of estimates and also serve as a guide in setting rates in connection with contract agreements. The SOR consists of a group of items such as excavation items, concrete items, masonry items,

demolition items, plumbing items and electrification items. As the rates of items mentioned in the SOR are likely to vary, the SOR is periodically revised, usually after three years by the Malaysian Public Works Department.

Figure 2 The proposed materials' cost effect model (context-specific model)



Standard commercial/bulk. Standard commercial materials are unpackaged, homogeneous, dry or liquid goods, without mark or count and usually free flowing, bought and sold by weight or volume, such as grains, oils and ores). Bulk materials are the essence in the construction industry. This material resource represents a substantial proportion of the total value of the project. Standard commercial materials management system includes the major functions needed in a construction project, i.e. identifying, acquiring, storing, distributing and disposing of bulk materials. Bulk materials planning may vary, depending on the project size, location, cash flow requirements and procedure for purchasing and inspection. Regular supply of the bulk materials in proper quantity must be ensured. It is extremely important because late or irregular delivery or wrong type of bulk materials delivered during construction is one of the major factors that contribute to the delay of a project. Also, the effective utilisation of manpower can be greatly enhanced by ensuring proper and sufficient availability of standard commercial materials. In this research, standard commercial materials are defined as materials that have not been converted; they are accepted in a ready state, for instance concrete and bricks.

Subcontract items. Subcontract items are assemblies, intermediate or equipment produced by suppliers. As the firm's workforce is kept minimal or totally removed, the firm's management and related capital expenditures can also be greatly reduced. On the other hand, subcontracting is an excellent means for a general contractor to exercise cost control while sharing part of its risks to other parties. Before subcontracting, the general contractor will perform a very detailed quantity survey. Referred to, but not limited to, the quantity from the detailed survey, the subcontract is usually unit priced and includes such clauses which will transfer the general contractor's risks in the main contract to the subcontractors.

Operations Resource Management (ORM). The term ORM is now commonly used to describe the many ordinary office products and services that organisations purchase from day to day: office supplies, furniture, forms, travel services, computers, janitorial and maintenance services, light bulbs, extension cords and the like. Usually thought of as high-volume and low-dollar items, they nonetheless amount to a significant portion of a company's total spending. To give some idea of the scale, in the USA alone in 2000, the overall market for ORM products and services reached $725 million. Indirect materials for ORM tend to be bought in high volumes but are fairly low in value per individual item.

Maintenance Repair and Operations (MRO). MRO has come into popular use, and today most software vendors selling solutions for indirect materials (and, therefore, the popular business press) have begun to mistakenly lump all indirect goods together under this heading. However, there is an important distinction that should be made. Office products should not be confused with mission-critical overhaul or maintenance items. In purchasing, the two groups of goods are often known as white collar ORM (staples and notepads) and blue collar MRO (replacement parts); and the respective purchasing processes in terms of the levels of complexity, cost and volume vary enormously (Alaghbari, 2005). Many analysts believe that MRO is in fact much more important of the two.

3.2 The approach of this study

This study is based on empirical investigation using deterministic method of materials' cost-related factors that cause an increase of housing market prices in Malaysian construction industry. The specific research aim of our work is 'an empirical analysis of materials' cost effect in the Malaysian housing market industry using deterministic method: case of Klang Valley', building on materials' cost classification (Carr, 1989). It is expected that the market price of the housing industry will be affected by the materials used in the construction and thus the materials sector. By further enhancing the materials' cost classification model, it is proposed that raw material, standard commercial/bulk, subcontract assemblies, ORM and MRO are most likely to be the leading cost contributors studied in this paper. It is expected that direct material cost will have a stronger effect as compared to indirect material cost, but by deducing how much effect that indirect material cost contributes to the housing market industry; alternative strategies can be proposed to minimise the indirect cost to the fullest.

3.3 Sample size and sampling method

To extend the credibility of this research, the data were collected from 100 respondents compromising professionals in order to identify material cost effect on housing market. The respondent group comprised engineers, architects and consultants, working in the housing sector at the Malaysia's Leading Property Developer, S P Setia Berhad; this is vital, as the research is about trying to understand the effect of materials' cost, and therefore, they must have some form of contact with the construction and the housing market industry. Moreover, the research should aid in drafting strategies for government initiative for housing market re-structuring in Malaysia, which requires at least a feasible

amount of sampling. As compared to the previous research on the housing market in Malaysia, this research sampling proves to be feasible as the earlier research sampling ranging from 0 to 50 respondents. To avoid parallax error while selecting the respondents, the method of purposive sampling was used for this research. All the respondents are from property development sector, meaning people who have been active members or employees under property development and people who have participated in the housing market industry. The questionnaire used for this research was specifically developed to address the research objectives and research questions. In order to take every single data into account, Likert scale has been used to avoid neglecting respondents' views. The Likert scale used here ranges from 1 to 5 to give an optimum choice of options for the respondents, with 1 being strongly disagree and 5 being strongly agree.

3.4 Analysis of data

All the data are entered into IBM SPSS Statistical software to analyses the Likert scale result in finding the correlation between the factors to deduce our conclusions. This will aid in finding which suggested hypothesis have a strong relationship with the increase of housing market prices in Malaysian construction industry.

3.5 Hypothesis

Hypothesis 1: Raw material antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

Hypothesis 2: Standard commercial/bulk antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

Hypothesis 3: Subcontract assemblies' antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

Hypothesis 4: ORM antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

Hypothesis 5: MRO antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

4 Analysis and findings

4.1 Results and data analysis

The inter-item consistency reliability or Cronbach's alpha reliability coefficients of the five independent (five factors) and dependent variables (housing market price) were obtained. They were all above 0.80. The result indicates that Cronbach's alpha for the six-item demographic profile measure is 0.92. Secondly, the 25-item five-factor measure is 0.99. Thirdly, the housing market price measure is 0.92. Hence, the closer reliability coefficient gets to 1.0, the better it is. Next, the variables with a reliability of less than 0.6 are considered poor, those in the 0.7 range acceptable and those over 0.80 are considered good. Hence, the internal consistency reliability of the measures used in this study can be considered good. Table 1 shows the result of the analysis in detail.

Table 1 Reliability analysis

Section	*Cronbach's alpha*	*Cronbach's alpha based on standardised items*	*No. of items*
Demographic profile	0.923	0.934	6
Five factors	0.995	0.996	25
Housing market price	0.923	0.948	5

Our hypotheses are further analysed in detail as follows.

Hypothesis 1: Raw material antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

As a first step, the first variable focuses on the raw material factor surrounding the material cost, which will contribute to the increase of housing market prices. A number of respondents responded positively for the first variable. Around 25.50% and 10.5% of respondents agree and strongly agree with the statement. It could be the respondents' view that reliability of the raw material factor is the fundamental cause for an increase in total materials' cost. Furthermore, the raw material factor price shifting can have an adverse effect on the overall cost, as it requires an additional direct labour to convert it into another state. Moreover, around 37.5% of respondents somewhat strongly disagree and 18% of respondents disagree with this statement. About 9.5% of respondent took a neutral stand, which implies that they are not very much convinced that this factor in fact plays a role in housing market price.

Table 2 Descriptive statistics for raw material antecedent

		Raw material 1	*Raw material 2*	*Raw material 3*	*Raw material 4*	*Raw material 5*
N	Missing	100	100	100	100	100
	Valid	0	0	0	0	0
Mean		3.45	3.53	3.4	3.75	3.93
Median		3.5	3.5	4	4	4
Mode		4	4	4	5	5
Std. deviation		1.065	1.085	1.165	1.87	1.35
Sum		690	710	680	750	786

Table 3 Correlation of raw material vs. housing market price (Hypothesis 1)

Correlations			
		Raw material	*Housing market price*
Raw material	Pearson correlation	1	.932**
	Sig. (2-tailed)		.000
	N	100	100
Housing market price	Pearson correlation	.932**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 3 presents the results of the correlation test. It highlights a strong and positive correlation between raw material and housing market price. The raw material antecedent does act as a contributing factor in the total material cost accumulating to the increase in housing market price. The correlation test also demonstrates whether *t*-test is significant or insignificant to the *r*-value; in this case, it is significant at $r = .932$, $p < .01$. Therefore, this hypothesis is accepted.

Hypothesis 2: Standard commercial/bulk antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

The second variable focuses on the standard commercial/bulk antecedent and five questions were used to justify it. The finding suggests that in total around 27.2% of respondents strongly agree with the statement, while 14% agree. It could be respondents' view that the reliability of standard commercial/bulk factor is the fundamental cause for an increase in total materials' cost. Furthermore, 38.8% of respondents strongly disagreed, while 12% disagreed. This is due to the fact that the respondents believe standard commercial/bulk antecedent alone cannot contribute to the increase in the housing market price, as there are more to it. About 7.5% of respondents took a neutral stand on the basis of deducing whether this factor is related to housing market price or not.

Table 4 Descriptive statistics for standard commercial/bulk antecedent

		Standard commercial/ bulk 1	*Standard commercial/ bulk 2*	*Standard commercial/ bulk 3*	*Standard commercial/ bulk 4*	*Standard commercial/ bulk 5*
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean	2.75	3.45	3.78	3.34	2.87	
Median	2	3	4	3	2	
Mode	2	3	4	3	2	
Std. deviation	0.723	0.687	0.982	0.698	0.745	
Sum	565	759	745	798	675	

Table 5 Correlation of standard commercial/bulk vs. housing market price (Hypothesis 2)

Correlations			
		Standard commercial/bulk	*Housing market price*
Standard commercial/bulk	Pearson correlation	1	.910**
	Sig. (2-tailed)		.000
	N	100	100
Housing market price	Pearson correlation	.910**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 5 shows the results of the correlation test. It highlights that there is a strong and positive correlation between standard commercial/bulk and housing market price. The housing market price antecedent does act as a factor when it comes to the increase in housing market price. The correlation test also demonstrates whether *t*-test is significant or insignificant to the *r*-value, whether significant or insignificant; in this case, it is significant at $r = .910$, $p < .01$. Therefore, this hypothesis is accepted.

Hypothesis 3: Subcontract assemblies' antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

The questions focusing on the subcontract assembly's antecedent will contribute to housing market price. Around 29.7% of the respondents agreed with the statement and 16.5% of the respondents somewhat agreed. The reason could be because respondents believe that subcontract assemblies are a factor whereby main developers could not avoid due to scale and outsourcing needs. Besides, only 23.8% of the respondents disagreed with the statement, while 25% somewhat disagreed. Respondents also believe that major housing developers do not solely rely on subcontract; therefore, price fluctuation in it will not affect the housing market price as a whole.

Table 6 Descriptive statistics for subcontract assemblies' antecedent

		Subcontract assemblies 1	*Subcontract assemblies 2*	*Subcontract assemblies 3*	*Subcontract assemblies 4*	*Subcontract assemblies 5*
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		3.87	3.65	3.76	3.98	3.54
Median		4	4	4	4	4
Mode		4	4	4	4	4
Std. deviation		0.934	0.76	0.834	0.965	0.922
Sum		798	709	735	765	776

Table 7 Correlation of subcontract assemblies vs. housing market price (Hypothesis 3)

Correlations			
		Subcontract assemblies	*Housing market price*
Subcontract assemblies	Pearson correlation	1	.898**
	Sig. (2-tailed)		.000
	N	100	100
Housing market price	Pearson correlation	.898**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 7 shows the results of the correlation test. It highlights that there is a strong and positive correlation between subcontract assemblies and the housing market price. The experience antecedent does act as a factor when it comes to increasing housing market price in Malaysia. The correlation test also demonstrates whether *t*-test is significant or

insignificant to the *r*-value; in this case, it is significant at $r = .898$, $p < .01$. Therefore, this hypothesis is accepted.

Hypothesis 4: ORM antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

This question that focuses on the ORM antecedent will help further contribute to the increase in the total materials' cost. Furthermore, most of the participants believed that the ORM factor plays a vital role in the indirect material cost even if to a small percentage ratio. Only around 35% of the respondents either disagreed or somewhat disagreed with the statement, while 65% of the respondents agreed and somewhat agreed with the statement. The reason could be because respondents feel that this factor which falls under the indirect material cost cannot essentially be considered a major contributor or even a contributor to the entire material cost. Therefore, the respondents disagree that indirect material costs have a role in housing market price.

Table 8 Descriptive statistics for operations resource management antecedent

		Operations resource management 1	*Operations resource management 2*	*Operations resource management 3*	*Operations resource management 4*	*Operations resource management 5*
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		3.87	3.45	3.34	3.76	3.59
Median		4	4	4	4	4
Mode		4	4	4	4	4
Std. deviation		0.837	0.849	0.848	0.765	0.887
Sum		735	798	646	728	776

Table 9 Correlation of operations resource management vs. housing market price (Hypothesis 4)

Correlations			
		Operations resource management	*Housing market price*
Operations resource management	Pearson correlation	1	.801**
	Sig. (2-tailed)		.000
	N	100	100
Housing market price	Pearson correlation	.801**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 9 shows the results of the correlation test. It highlights that there is a strong and positive correlation between ORM and housing market price. The ORM antecedents do act as a factor when it comes to housing market prices. The correlation test also demonstrates whether *t*-test is significant or insignificant to the *r*-value; in this case, it is significant at $r = .801$, $p < .01$. Therefore, this hypothesis is accepted.

Hypothesis 5: MRO antecedents have a strong relationship with the increase of housing market prices in the Malaysian construction industry.

The final question that focuses on the MRO antecedents will help further contribute to the increase in total materials' cost from the indirect material sector. This is the added antecedent to the model to test its credibility. Besides, around 49.5% of the respondents of the MRO antecedents agreed and provided positive feedback, which is higher than the previous indirect material cost element of ORM. The reason could be because that respondents believe there is a detrimental effect if there is an evidence of cost-cutting in this factor as it would result in a chain reaction, creating an adverse domino effect in the entire project. Around 40% of the respondents did not agree with this statement. As said earlier on, the respondents believe there is more to it than maintenance indirect cost for it to have an effect on the overall project cost.

Table 10 Descriptive maintenance repair and operations antecedent

		Maintenance repair and operations 1	*Maintenance repair and operations 2*	*Maintenance repair and operations 3*	*Maintenance repair and operations 4*	*Maintenance repair and operations 5*
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		3.85	3.35	3.98	3.63	3.78
Median		4	4	4	4	4
Mode		4	4	4	4	4
Std. deviation		0.837	0.965	1.109	0.987	0.824
Sum		765	678	765	787	776

Table 11 Correlation of maintenance repair and operations vs. housing market price (Hypothesis 5)

Correlations			
		Maintenance repair and operations	*Housing market price*
Maintenance repair and operations	Pearson correlation	1	.874**
	Sig. (2-tailed)		.000
	N	100	100
Housing market price	Pearson correlation	.874**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 11 shows the results of the correlation test. It highlights that there is a strong and positive correlation between MRO and housing market price. The MRO antecedent does act as a factor when it comes to increasing the housing market price from the indirect material cost sector. The correlation test also demonstrates whether *t*-test is significant or insignificant to the *r*-value; in this case, it is significant at $r = .874$, $p < .01$. Therefore, this hypothesis is accepted.

4.2 Summarising the findings

This section provides a short summary of the findings to wrap up the analysis.

- *Raw materials* have been found to be a key element contributing to the housing market price from the direct material cost sector under the total material cost. This also reflects the proportion of raw materials used in housing construction is far greater than the rest of the antecedents.
- *Standard commercial/bulk* has been found to be the second key element contributing to the housing market price from the direct material cost sector under the total material cost. It is notable that major corporations do rely on bulk supply in order to reach ready state material; therefore, a shift in the pricing quote by the supplier can have a significant effect on the overall project cost.
- *Subcontract assemblies* have been found to be the third key element contributing to the housing market price from the direct material cost sector under the total material cost. Subcontract assemblies along with outsourcing material and equipment do show a greater amount of influence as compared to the earlier discussed factor; it is significant enough to change the graph of the total cost.
- *MRO* have been found to be the fourth key element contributing to the housing market price from the indirect material cost sector under the total material cost. This factor was left out in previous studies with the justification that it does have any significant effect on the housing construction market. It has been proven otherwise from this study; it does have a significant effect and also carries an adverse domino effect in failing to utilise it properly.
- *ORM* have been found to be the fifth key element contributing to the housing market price from the indirect material cost sector under the total material cost. This factor carries the lowest significant effect and does not show any empirical evidence of changing the housing market price.

5 Conclusion

This paper aimed at contributing to the field of housing market industry by exploring the phenomenon of materials' cost effect. In the first part of the paper, the literature on materials' cost effect and classification of material costs has been reviewed and we identified relevant constructs to explain the origins of material cost. In the second part, a model on materials' cost effect in the housing market was formed. Combining insights from previous classification of material cost literature and anecdotal evidence in the field of housing market, it has been proposed that material costs are classified into two types, namely direct material cost and indirect material cost. Further branching out from this classification, raw material takes the lead, followed by standard commercial/bulk and subcontract assemblies, which are affected by MRO.

The objective of this study was 'An empirical analysis of materials' cost effect in the Malaysian housing market industry using deterministic method'. Both primary and secondary data sources were used in the analysis. Specific research questions were used to narrow the scope of the research and to guide the research in the desired direction.

From the empirical analysis, direct materials, obviously then, are those involved in the manufacturing supply chain that are directly related to the production of finished goods. These materials tend to be purchased in large volumes, and depending on the level of sophistication of a company's forecasting and planning capacity, they are, at least to purchasing specialists, fairly predictable in name, if not in exact amounts. Purchasing officers in aluminium manufacturing companies know they need to procure certain quantities of bauxite and aluminium at certain times during the manufacturing process. High-technology manufacturers know that they will require microchips, wiring and other components. Procurement of direct goods, then, is of concern only to manufacturing, distribution or retail companies that create, assemble or move large numbers or amounts of finished or perishable goods. Because of their predictability and high volume, procurement of direct materials accounts for far fewer purchasing transactions (between 20% and 40% in manufacturing companies), but can account for up to 60% of a manufacturing firm's total procurement expenditure.

Through this study, by focusing on utilising the resources efficiently from the indirect material cost followed by the direct material cost, a project value can be sustainably reduced and therefore has the potential to reduce the entire housing market price to an extent.

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