Volume 6 - Issue 2

International Journal of Business Science and Applied Management

A fresh approach to business and management research

www.business-and-management.org

ISSN 1753-0296

Int. Journal of Business Science and Applied Management, Volume 6, Issue 2, 2011

Rural and urban women entrepreneurs: A comparison of service needs and delivery methods priorities

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Abstract

Women entrepreneurs face a wide variety of barriers and challenges throughout the life and growth of their entrepreneurial venture. This study expands the knowledge base on women entrepreneurs' needs, specifically their needs in terms of service areas and service delivery method preferences. Twenty three "needed" service areas were identified by 95 Manitoba based women entrepreneurs. The first five included: finding new customers, growth benefits and tools, market expansion, general marketing, and networking skills. This study also examined the differences between urban and rural based entrepreneurs. Two service need areas "how to find mentors and role models" and "legal issues" exhibited statistically significant priority differences. Service delivery methods did not produce any statistically significant differences. Overall, this study concludes that regardless of location, women entrepreneurs' training and support needs are not significantly that different. The effects of entrepreneurial stage and years in business on entrepreneurial support needs are also examined.

Keywords: entrepreneurship, women owned businesses, urban and rural communities, entrepreneurial training, business education, business support services, Canada

Acknowledgements: I would like to express my gratitude for the support of this research by the Women's Enterprise Centre of Manitoba. I also wish to thank Kevin Balog (Central Michigan University), Wendy Josephson (University of Winnipeg) and Barbara Orser (University of Ottawa) for their encouragement, helpful comments and feedback on this paper.

1 INTRODUCTION

This exploratory study was designed to build on previous research which examined the type of services women entrepreneurs wish to obtain from entrepreneurial support agencies. This study adds two additional elements to this area of research: what type of supports can agencies offer to encourage and assist Manitoba women entrepreneurs' business venture growth and overall does the type of support/assistance needed differ between urban and rural Manitoba women entrepreneurs. Previous research has already established that entrepreneurs' service needs differ based upon entrepreneurial stage. This study also asks if service needs differ based on location?

The area of service and growth needs of women entrepreneurs is an important one as women are increasingly participating in small business ownership and entrepreneurship. In fact, according to Industry Canada, in 2001 nearly half of all small and medium enterprises had at least one female owner. In addition to that statistic, the number of Women business owners are constantly growing and is projected to reach the one million mark in Canada by 2010 (CIBC 2005).

Although the number of women entrepreneurs is growing, research has identified that women entrepreneurs' enterprises are less likely to grow when compared to their male counterparts (Huot & Carrington, 2006). Building on the barriers to growth identified in the literature review, additional service areas related to these barriers have been added into the support choices offered in this study on Manitoba women entrepreneurs.

Overall, women entrepreneurs face a wide variety of challenges both in starting and growing their business ventures. Considering these challenges, entrepreneurial advising, training and education services have been found to play a positive role in venture success (Bird, Sapp & Lee, 2001; Chrisman, 1999; Chrisman & McMullan, 2004; Hughes, 2006). Specifically, it has been shown to be an important resource effective at reducing the number of small business failures (Menzies & Gasse, 1999), and expanding and enhancing entrepreneurial/management knowledge (Ganesan, Kaur & Maheshwari, 2002; Menzies & Gasse, 1999; Robinson, 1982). However, it has been noted that geographic location establishes to a large extent the availability of resources vital to the entrepreneurial ventures start up and success (Birch, 1987; Porter, 1990). Which leads to the questions: are there different service needs and priorities for rural women entrepreneurs? Are there any additional service needs to be considered based on the challenges faced by rural entrepreneurs? What are the best mechanisms to deliver the supports required? Overall, there appears to be a lack of research on rural Canadian women entrepreneurs. This study will aid in expanding this limited base of research. Also, it will provide additional insight to aid women entrepreneurial support agencies such as the Women's Enterprise Center of Manitoba (WEC) in the design, creation and implementation of their programs.

This article begins by reviewing current literature on the service needs and barriers to growth for women entrepreneurs. It also provides a literature review of rural entrepreneurial barriers, training delivery methods and other training/service considerations. Next, the methodology section describes the research design, data collection methods and results followed by this study's result interpretation. The final section presents this study's conclusions and practical implications.

2 REVIEW OF RELATED LITERATURE

Women Entrepreneurs' Service Needs

Researchers have looked at the service needs of entrepreneurs from a variety of perspectives. In examining the research on entrepreneurial service needs and barriers, a number of common service area themes appeared. The goal in this area was to make a listing (table 1) of the more common service needs of entrepreneurs in general, as opposed to limiting this study to one specific perspective. As part of the survey, free form sections were added to ensure a service area deemed important by participating women entrepreneurs had not been neglected.

The starting point for the list of service areas began with Alpander, Carter and Forsgren's (1990) study which identified ten critical problem areas for entrepreneurs in their first three years. Specifically, they identified the following areas:

1. finding new customers,
2. obtaining financing,
3. recruiting and hiring new employees,
4. recruiting and hiring new managers,
5. dealing with current employee problems,
6. product pricing,
7. planning for market expansion,
8. handling legal problems,
9. determining and maintaining product quality and
10. dealing with government agencies

Relating to the ten points identified above, further research indicated additional service details tied into these areas:

Finding new customers:

a) instability of demand (Carrington, 2006),
b) market/competitive assessment (Orser & Riding, 2006) and
c) marketing in general (Ganesan et al., 2002; Kalyani & Chandralekha, 2002)

Financing:

a) management of working capital (Ganesan et al., 2002)
b) accounting (Lorrain & Laferte, 2006) including budgeting (Nelson, 1987)

Dealing with government agencies

a) levels of taxation (Carrington, 2006; Nelson, 1987)
b) government regulations (Prime Ministers Task Force, 2003).

There were also a number of additional themes in the research to add to the growing list:

a) time management (Lorrain & Laferte, 2006),
b) balancing life and family (Orser & Riding, 2006),
c) stress management skills (Lorrain & Laferte, 2006),
d) negotiation skills (Ganesan et al., 2002),
e) networking (Ganesan et al., 2002; Krishna, 2003; Langowitz, Sharpe & Godwyn, 2006; Menzies, Brenner, & Filion, 2006; Merrett & Gruidl, 2000; Miaoulis, Brown & Saunders, 2005; Pages, 2005; Totterman & Sten, 2005; Witt, 2004),
f) finding mentors/mentorship (Langowitz et al., 2006; Miaoulis et al., 2005; Merrett & Gruidl, 2000; Pages 2005),
g) delegation (Krishna, 2003) and
h) business plan (Katerina & Trihopoulou, 2005; Nelson, 1987; Orser & Riding, 2006) /how to start a business (Prime Ministers Task Force, 2003; Rotefoss & Kolvereid, 2003).

Strategic planning, production/operations (Kickul, Gundry & Sampson, 2007) and information on growth tools (Orser & Riding, 2006) are also areas added (table 1).

Table 1: Entrepreneurial Service Needs by Theme

Theme	Service Need Identified	Study Reference
Finding new customers	Instability of demand	Carrington 2006
	Market/competitive assessment	Orser and Riding 2006
	General marketing	Ganesan, et al. 2002 Kalyani and Chandralekha 2002
Financing	Management of working capital	Ganesan, et al. 2002
	Accounting including budgeting	Lorrain and Laferte 2006, Nelson 1987
Dealing with government agencies	Levels of taxation	Nelson 1987
	Government regulations	Prime Ministers Task Force
Personal challenges	Time management	Lorrain and Laferte 2006
	Balancing life and family	Orser and Riding 2006
	Stress management skills	Lorrain and Laferte 2006
	Negotiation skills	Ganesan, et al. 2002
	Networking	Ganesan, et al. 2002; Krishna 2003; Langowitz, et al. 2006; Menzies, et al. 2006; Merrett and Gruidl 2000; Miaoulis, et al. 2005; Pages 2005; Totterman and Sten 2005; Witt 2004
	Finding Mentors/Mentorship	Langowitz, et al. 2006; Miaoulis, et al. 2005; Pages 2005
	Delegation	Krishna 2003
	Business Planning/How to start a business	Katerina and Trihopoulou 2005; Nelson 1987; Orser and Riding 2006; Rotefoss and Kolvereid 2003; Prime Ministers Task Force 2003
Strategic planning	Strategic planning	Kickul, et al. 2007
Production operations	Production operations	Kickul, et al. 2007
Growth tools	Information on growth tools	Orser and Riding 2006

Although there are a number of common themes related to entrepreneurial barriers, learning needs and support, there is no consensus on a one fit system. Another theme noted in the literature is the suggestion that women entrepreneurs needs differ depending on what stage of development they are in (Kickul et al., 2007; Orser & Riding, 2006). In order to further test these findings, this study incorporated a development stage indicator into the survey design. Specifically, respondents were asked to self identify if they are a nascent (business not yet open and operating), start up (business in first year of operation), growth (business owners who specifically identify themselves having a growth focus) or established (business owners who have been in business more than 1 year but who do not identify growth as a priority) entrepreneurs.

Barriers to Growth

The area of barriers not only to entrepreneurship but also growth was a key consideration in composing the listing of potential service areas. Although many of the barriers listed in the general section above relate also to business growth specifically, this section investigated growth and its barriers for women entrepreneurs to see if additional services should have been added to this list.

In their study, Orser and Hogath-Scott (2002) identified that "a business owners' intention to pursue growth of their firm leads to subsequent growth". Morris, Miyasaki, Watters and Coombes (2006) findings support this growth intention as their finding suggests "growth is a deliberate choice" made by women who "have a clear sense of the costs and benefits of growth". Tied into the intention and pursuit of growth is the supposition that many women business owners and perhaps entrepreneurial trainers may not be fully aware of the benefits of growth such as better credit terms, value added to customers through breadth of product lines, choice of quality employees, growth in remuneration and the ability to delegate to others with the potential to maintain/increase personal time control (Orser & Riding, 2006). Thus, the promotion of these benefits may influence or aid in creating growth intention. Another interesting finding was a positive correlation between women who underwent some type of entrepreneurial training and their experienced higher growth compared to their counterparts (Ganesan et al., 2002). Overall, this suggests not only the benefits of entrepreneurial training but the importance of growth intention and the promotion of growth benefits. Thus, growth and growth benefits were incorporated as part of not only the business planning section but also growth tools sections. Therefore, two of the items listed were modified from starting a business to starting and growing a business and from growth tools to growth benefits and tools.

Exporting is another area of business growth receiving much attention. In a comprehensive literature review prepared by Orser (2007) it was noted that in particular, women-owned businesses are significantly less

likely to export/trade in international markets than their male counterpart firms. As part of the list of barriers to exporting, the time required to gather information about the process was identified. Adding to this time constraint, the Prime Minister's Task Force on Women Entrepreneurs noted that many women entrepreneurs found the process of entering the exporting market to be overwhelming. This task force also noted that many women found exporting less complicated than they initially thought, and that their firms achieve export profitability shortly after launching into foreign markets. The exporting process was therefore added to the list of service needs.

Rural Environment Considerations

According to the 2006 census, over 404,078 (or 35%) of Manitoba's population lives in rural areas, defined for this study's purpose as those outside of Manitoba's cities. Of this population, women[1] make up nearly 199,830 (or just under 50%) of this rural Manitoba population. In rural areas such as these, the realities of a declining resource base and agricultural economies combined with lack of employment opportunities have resulted in more women becoming interested in self employment (Kelly & Osayanmo, 2005; Warren-Smith & Jackson 2004). Manitoba's rural women, like other Canadian rural women, are interested in entrepreneurship but face challenges and issues related to their location.

In 2005, 2006 and 2007 two studies were conducted for the Rural Team Manitoba and the Canadian Rural Partnership. These studies focused in general on the needs of rural and northern women in Manitoba. As these two series of studies were specific to Manitoba, they marked the starting point of this section of the literature review.

Kelly and Osayanmo's 2005 study "Changing Needs of Rural and Northern Women in Manitoba" for Rural Team Manitoba, recommended an increase in self employment/entrepreneurial skills programs in rural Manitoba. Limited access to financing was also found to be a challenge for rural women as many have limited income, limited assets and limited if any credit history. As expected, geographic isolation, transportation, limited childcare, the need for enhanced communication services (cellular services), lack of awareness of education and training programs in place, limited information technology (internet), and lack of mentors/networking opportunities all play a role in limiting Manitoba's rural women's service and entrepreneurial opportunities.

In 2006 and 2007 three Canadian Rural Partnership symposiums were held around rural Manitoba entitled "Changing Needs of Rural, Northern and Remote Women in Manitoba". The challenges identified in the previous 2005 study were still found to be in existence. To add to the list of challenges, the difficulty in finding skilled employees was noted. Tied to this difficulty was the perceived difference between urban and rural wage and benefit levels. Another study finding noted the lack of long term entrepreneurial planning, issues of self esteem and low levels of self confidence and the need for sharing of business success stories to change local perceptions.

Another Manitoba study in 2003 entitled "Building Strong Urban and Rural Communities" was conducted via a town hall format in Steinbach, Manitoba. This dialogue, in addition to issues previously outlined, identified that those living in smaller rural communities spend more time with information technology due to dial up speed connections, etc. E-learning however was also identified as a method providing future opportunities as technology access increases.

A more general Canadian study conducted by David Bruce (2000) comparing leading and lagging rural communities found that in addition to barriers already identified, growth (specifically expanding their sales markets beyond their communities) or being too close to competitive markets in large centers presented challenges for rural entrepreneurs. Lack of growth skills was also identified. Technology related barriers and the need for initiatives related to technology were noted. Specifically related to the internet, it was found that a number of those involved in this study did not use the internet for ecommerce/online transactions.

The Prime Minister's Task Force on Women Entrepreneurs (2003) echoed many of the findings already identified. One noteworthy item not mentioned so far related to financing, in particular the lack of competition in rural areas as banks are increasingly withdrawing from rural areas making it difficult to access capital.

The majority of these findings overall appear to mesh with the service areas already identified except for those in the area of technology, which was added into the listing. The differences however may appear in the areas of type of delivery method preferences and priority areas of training/support services based on the rural barriers identified above.

Delivery Methods and Other Considerations

[1] According to the Statistics Canada 2006 survey accessed online January 31, 2008 http://www12.statcan.ca/english/census06/data/popdwell note the term Women in reference to this statistic refers to those who were represented in this data as Female.

Considering all of the barriers faced by women entrepreneurs, convenience is crucial when considering training and service delivery methods. Menzies et al. (2004) found that women were less likely to have taken courses specifically related to starting a business and recommended providers examine course scheduling, location and female friendly content. Orser's (2007) literature review highlights a related finding from the Canadian Foundation of Women Entrepreneurs indicating dual roles in terms of business owners and primary family care givers results in women having less time for training and related activities. Thus, convenience and appeal of location, training format, delivery timing/flexibility and delivery methods will be key training and service considerations.

Building further on these considerations, Langowitz et al. (2006) found in their study that the most frequently attended Womens Business Center program formats included one hour seminars followed by one day workshops. Their study also found that women typically prefer morning or noon time periods instead of evenings or afternoons. These options will therefore be included in the survey to see if these findings can be replicated.

A Womenable (2007) study on missing middle women entrepreneurs found that their group of entrepreneurs had a desire for personal contact via online learning. This group was also open to technologically enabled education. On the whole, they also found that experiential learning was favored over the traditional classroom style approach. Examples included the use of peer roundtables, mentoring, local workshops and weekend retreats. These approaches were included in the survey as well.

Warren-Smith and Jackson (2004) echo these findings in their examination of the Women in Rural Enterprise (WiRE) program. The WiRE program found that charging a nominal fee (one that could be waived for those on benefits or of low income) increased the level of commitment to training provisions. The format preferred and felt to be more effective by its members was one that included time for networking. Thus, cost was another element added into the survey. Networking had already been included as suggested above.

Stanger (2004) in his literature review, concluded and recommended exposure to female role models and peers as "an important strategy in breaking down isolation and self-esteem barriers". Another recommendation included "electronic information technology systems and interactive training modules could be used to address location, language and cultural barriers". Role models, peer interactions, personal counseling and electronic methods such as video conferencing, online training, podcasts, online chat rooms, CDs and DVDs were included amongst potential delivery methods.

Thomas and Moisey's (2006) study found the convenience of 24/7 access to information as one of the key essential features of the internet for informal learning. Barriers they identified to attending classes offered via the internet/online training included cost, time and perceived lack of value. Technical issues were also identified as challenges. Although this study focused on informal internet for informal business related learning, it found that its participants did develop numerous competencies and skills using the internet. Thus, the internet needs to be considered both as a training/information source and as a delivery method. Technical support also appears to be a service offering that needs to be associated with internet based learning opportunities.

Additionally, the Prime Minister's Task Force (2003) on Women Entrepreneurs included a recommendation to "examine the Women's Enterprise Initiative which could serve as a model for further on-line training for all women entrepreneurs across Canada". Also recommended was a "one-stop shopping access" which would include all federal government programs for, or relating to women entrepreneurs. Tied to this recommendation was a portal to "provide women entrepreneurs with information from all relevant sources both governmental (federal, provincial and municipal) and private (banks, professional, business and industry associations)." The creation of such a portal was added to potential services/resources.

METHODOLOGY

The survey instrument was designed to contain three sections. Section one collected general respondent information: number of years in business, number of employees, entrepreneurial phase, education level, age and internet access. In addition to these elements, business location was included to identify rural and urban entrepreneurs. This first section also included a question to validate that the respondent was at least a 50% owner of the business.

The second section of the instrument focused on entrepreneurial needs. This section used a 5 point Likert scale ranging from 1(not needed) to 5 (a top priority need). Each respondent was asked to identify their need ranking for 36 service areas. A free-form area was included following this section to ensure all entrepreneurial needs had been identified. This section concluded with a request for the respondent to identify their overall top 5 needs.

The third section focused on service delivery methods. Thirteen delivery methods were identified and each respondent was asked to rank order them from one to thirteen with one indicating their most preferred delivery method. Following this area, a free-form question was used to identify any omitted delivery methods. This free-form question was followed by an area requesting participants to indicate their time of day and day of week delivery preferences. The next area in this section presented a number of convenience items: onsite childcare,

course fee waiver, transportation provided, free parking and technical support for delivery methods involving the computer. Respondents were asked to select the items they felt would enhance service delivery convenience. A free-form question then followed looking for anything else that could be done to increase the delivery convenience for the entrepreneur. The last part of this section asked the entrepreneur to identify, using a 5 point Likert scale ranging from 1 (unlikely) to 5 (likely), how likely they would be to use a web portal/website one stop shop with both government and private resources related to women entrepreneurs.

In preparing to use this survey instrument, it was first provided to the WEC business analyst for feedback. Based on this feedback two service areas were added in "determining current and future hiring needs" and "succession planning". In addition, a number of the initial service areas were reworded for ease of understanding based on the analysts' previous interactions with the clients. Prior to finalizing the survey instrument a test group of local entrepreneurs was used as a test group for the instrument.

Data Collection

With support from the Women's Enterprise Center of Manitoba, 750 surveys were sent out to the centers clients and those selected off of the Dicom Manitoba women entrepreneurs mailing list. The sample population consisted of combining the WEC's female client listing filtered for those who indicated "yes" in response to mailings and the purchased Dicom Manitoba women entrepreneurs business listing for a total sample population of 5386. Note that duplicates were removed between the Dicom and WEC listing. After combining these two listings, a computer random number generator was used to generate 750 line numbers. These line numbers identified those selected to participate in the mail survey.

Of the 750 surveys sent, 62 items were returned to sender due to incorrect address or addressee moved. Of the remaining 688 outstanding 95 were returned, representing a return rate of 13.8%. As WEC respondents have a previous relationship in some way with WEC there is a chance that there may be a greater response rate from this particular group, however as this was an exploratory study and to encourage participation, the respondents name or address was not included on the returned survey in order to maintain anonymity.

RESULTS

Respondent Profile

The overall average profile of respondents was an urban (66.3%) women entrepreneur 50-64 years of age (42.6%), with 1-10 employees (85.1%) who had been in business for over 5 years (64.9%). The average respondent did have internet access (93%), high speed in nature (84.2%) and felt it was a necessary business tool (78.9%). Overall, the entrepreneur respondent was educated; typically completing community college (29.5%) or an undergraduate degree (24.2%) and self identified their entrepreneurial stage as one of growth (51.6%).

Comparing urban and rural respondents, four areas of difference were identified: age, entrepreneurial stage, high speed internet access and education level. In the rural area the majority of respondents (45%) fell clearly into the 50-64 age category. Looking at the urban area, the highest number (41.3%) of respondents fell into the same category however there were also a large number (36.5%) in the 40-49 age category. These findings are consistent with the overall female population of Manitoba, as the majority of women in Manitoba fall into the 50-64 age category.

In urban areas, the growth stage clearly represented the majority of respondents (54.8%). For rural respondents', the entrepreneurial stage was not so clearly identified. Rural respondents were presented in only two of the four classifications, with a slight majority (53.1%) at the established level and the remainder (46.9%) at the growth stage.

There was a consistent level of response to the question "do you have internet access?" 93% of the overall respondents matched the results in both the urban and rural groupings. The type of internet service differed though, with 98% of urban respondents having high speed vs. 83% of rural respondents. A few comments relating to the lack of access to high speed internet in rural areas were noted.

A further difference was found in education level. The majority of urban respondents had an undergraduate degree (30.6%) followed by completion of community college (29%). Rural respondents however differed, as the majority of rural respondents had completed community college (32.3%) followed by the high school category (22.6%).

Entrepreneurial Service Area Needs

The respondents' service area needs were categorized using the mean for each service area (Table 2). An area was determined to be needed if its mean presented a value of 2.5 or greater, which when rounded equaled a value of 3 or more. A rounded value 3 was selected as the cutoff point as the survey instrument used a Likert scale rating of 3 to identify a "needed" area. In order of importance based on mean the following service areas were found to be "needed" by respondents: finding new customers (3.26), growth benefits and tools (2.91),

market expansion issues (2.84), general marketing (2.84), networking skills (2.83), computer software skills development (2.82), dealing with demand/sales instability (2.82), succession planning (2.78), time management skills (2.78), determining market competitiveness (2.76), stress management (2.71), strategic planning (2.70), negotiating skills (2.70), technology and ecommerce (2.66), taxation (2.64), how to find mentors and role models (2.64), accounting and bookkeeping (2.63), dealing with government regulations (2.63), planning to buy/sell an established business (2.60), budgeting (2.56), life and family balance (2.55), business planning (2.53) and cash flow management (2.51).

This "needed" area/topic grouping was then broken out into two groups based upon mode scores. Topics which had a mode equal to or greater than 3 were grouped as priority one needs and topics with a mode less than 3 were grouped as priority two needs as outlined in Table 2.

Table 2: Entrepreneurial Service Needs Results

Service Area	N Valid	N Missing	Mean	Mode	Priority Needs Level
Finding New Customers	91	4	3.2637	5.00	1
Business growth benefits and tools	90	5	2.9111	4.00(*)	1
Market expansion issues	89	6	2.8427	3.00	1
General marketing	91	4	2.8352	3.00	1
Networking skills	88	7	2.8295	3.00	1
Computer software skills development	91	4	2.8242	3.00	1
Dealing with demand/sales instability	87	8	2.8161	3.00	1
Succession planning	92	3	2.7826	1.00	2
Time management skills	90	5	2.7778	3.00	1
Determining market competitiveness	91	4	2.7582	3.00	1
Stress management	87	8	2.7126	3.00	1
Strategic planning	90	5	2.7000	3.00	1
Negotiating skills	89	6	2.6966	2.00	2
Technology and ecommerce	90	5	2.6556	2.00	2
Taxation	92	3	2.6413	1.00	2
How to find mentors and role models	91	4	2.6374	3.00(*)	1
Accounting and bookkeeping	91	4	2.6264	1.00	2
Dealing with government regulations	91	4	2.6264	1.00	2
Planning to buy/sell established business	90	5	2.6000	1.00	2
Budgeting	93	2	2.5591	1.00	2
Life and family balance	89	6	2.5506	1.00	2
Business planning	89	6	2.5281	1.00	2
Cash flow management	91	4	2.5055	1.00	2
Handling legal issues	91	4	2.4835	3.00(*)	
Dealing with government agencies	91	4	2.4725	2.00	
Obtaining financing	91	4	2.3736	1.00	
Determining and setting product price	89	6	2.3146	1.00	
Recruiting and hiring new employees	90	5	2.3000	1.00	
Determining and maintaining product quality	87	8	2.2069	1.00	
Production and operations	89	6	2.2022	1.00	
How to start and grow a business	89	6	2.0899	1.00	
Determining current and future hiring needs	90	5	2.0556	1.00	
Dealing with employees issues – including retention	89	6	2.0337	1.00	
Delegation Skills	90	5	1.9889	1.00	
Exporting: benefit and tools	87	8	1.9540	1.00	
Recruiting and hiring new managers	89	6	1.7191	1.00	

** Multiple modes exist.*

To test for significant differences between urban and rural respondents, a two tailed t-test at .05 level of significance was used. Only two items had significantly different results: how to find mentors and role models (2.402) and legal issues (2.090). Although both groups had identified as below the "needed" category, the urban respondents placed a higher level of need than rural respondents. The urban respondents' responses were found to be closer to just below needed than rural entrepreneurs whose responses were closer to slightly needed. A second test of significance, a Mann-Whitney U test, was performed to ensure the assumptions of the T-test were met and to test the robustness of these findings. This second test yielded the same results.

Next, the respondents' top five listings were examined (Table 3) in total. With two exceptions, (top five items 4 and 5b) all other items were previously identified as "needed" by the participants (table 2). The items in each category with the highest frequency determined their ranking. In order of importance, the top five service

need topics were: finding new customers, cash flow management, budgeting tied with time management, the respondents own additions and accounting/bookkeeping tied with dealing with government agencies rated as number five. Looking at the freeform additional service areas (Table 3), the most common service area additions were those related to customer service.

Table 3 also contains a comparison of the top five selections of urban vs. rural entrepreneur respondents. For each top 5 item there was a wide variety of selections made due in part to the high number of service areas and thus the frequencies for each item are not very high. It is however noteworthy that the top two of this top five: finding new customers and cash flow management are identical for both groups but the remaining bottom three service needs differ.

Table 3: Top 5 Service Needs

Most important to Least (frequency)

Rating	All Respondents	Urban	Rural
1	Finding new customers (15)	Finding new customers (11)	Finding new customers (4)
2	Cash flow management (8)	Cash flow management (5)	Cash flow management (3)
3	Budgeting and Time management (7)	a. Accounting and bookkeeping tied with b. budgeting (5)	a. Dealing with demand/sale instability tied with Time management skills (3)
4	Additional area – newly identified by respondent (7)	a. Success planning (4) tied with b. Computer software skills development (4)	Additional area newly identified by respondent (4)
5	a. Accounting and bookkeeping tied with b. dealing with government agencies (5)	Accounting and bookkeeping (4)	a. Dealing with government agencies, b. Growth benefits and tools tied with c. Negotiating skills (2)

Additional Service Areas Identified

New Service Area	Respondent Location
Customer service looking at personality types	Urban
Working relationships with distributors	Urban
First time entrepreneurs obtaining financing at a lower interest rate	Rural
Inventory controls	Rural
Customer service	Urban
Business Coaching for senior business owners (ie have established business)	Urban
Advanced internet marketing	Urban
Setting product return policies	Urban
How certain standards effect my industry	Urban
How to deal with governing bodies more effectively regarding labour issues	Urban
How to stay positive - getting rejected on the phone	Urban
Customer care in interacting with people	Rural
Being respectful	Rural

Entrepreneurial Service Needs and Business Stage

Prior research indicated a difference in entrepreneurial needs based on entrepreneurial stage. In this study there were not enough responses in the nascent (2 respondents) and start up (7 respondents) category to factor these two stages into the analysis, however analysis was performed on growth vs. established categories.

Using a two tailed T-test one significant difference was found: market expansion issues (2.346). Upon using a Mann-Whitney U-test, market expansion (-2.293) and budgeting (-2.067) both appeared as significant items. Looking at the area of market expansion, those who identified themselves as "growth" phase indicated this was a "needed" item whereas the established entrepreneurs rating was closer to "slightly needed". The same trend was found in budgets area.

Service Delivery Methods

This section offered respondents a chance to rank their delivery service method preference based upon 13 predetermined delivery mechanisms. Treating our respondents as one group, based upon their rank ordered sums with the lowest value indicating top preference these items were sorted. The top five delivery methods include: local workshops (sum 223), personal consultation (238), mentoring (266), online training – at own pace (310) and peer roundtable (315). As there was not an overall consistent number of respondents, a comparison was made in rankings using mean values. Based upon means, the ranking for item 4 "online training – at own pace" and item 5 "peer roundtable" exchanged places. Table 4 displays a complete listing of the 13 delivery method rankings.

Urban and rural priority responses were compared using both a two tailed T-test and a Mann-Whitney-U test at .05 level of significance. Although as seen in Table 4 delivery method preferences do differ, both tests yielded the same response: no statistically significant differences between these two groups were found.

In examining the results of this section, it is worth noting that approximately 43% of respondents did not participate in this section or provided invalid selections (i.e. using a ranking number more than once).

Table 4: Delivery Method and Convenience Feature Rankings

Rankings - Delivery Method Preferences

Delivery Method	Overall Ranking	Overall Sum	Urban Ranking	Urban Mean	Rural Ranking	Rural Mean
Local workshops	1	223	1	3.5610	2	4.2778
Personal consultations	2	238	2	3.8605	1	4.0000
Mentoring	3	266	3	4.5897	3	4.8333
Online training – at own pace	4	310	5	6.1765	4	5.0000
Peer roundtable	5	315	4	5.4359	7	6.0589
CDs	6	317	6	6.3429	5	5.0000
DVDs	7	345	7	6.5279	6	5.7894
Online training – group course	8	402	8	7.7059	9	7.7778
Video conferencing	9	408	9	8.1176	8	7.7647
Weekend retreat	10	453	10	8.4444	10	8.7647
Online chat room – specific times	11	482	11	9.2286	12	9.3529
Online chat room – general 24/7	12	496	12	9.6857	11	9.2353
Podcast	13	512	13	9.7941	13	10.5294

Convenience Feature Rankings

Feature	Urban	Rural
Course/training fee waived	1	1
Free parking	2	**3**
Technical support for delivery method involving computers	3	**2**
Transportation provided	4	4
Onsite childcare	5	5

Service Delivery Convenience Time of Day Preference

Based upon respondents frequency selections, the most popular time of day were mornings, then evenings followed by afternoons and lastly around noon. Splitting out the results by urban and rural respondents, urban respondents' preferences match the overall results. Rural respondents' preferences on the other hand, reversed the first two selections with evenings as their first selection and mornings as their second. All other time of day preferences were identical.

Day of the Week Preference

Using mean values, respondents indicated their most preferred to least preferred days of the week as follows: Tuesdays, Wednesdays, Mondays, Thursdays, Fridays, Saturdays and Sundays. Looking at Urban and Rural, the bottom three results relating to Fridays, Saturdays and Sundays stayed the same. Urban respondents' first four preferences started with Wednesdays as their first choice followed by Tuesday, Thursday and then Monday. For Rural respondents, Monday was their first choice followed by Tuesday, Wednesday, and then Thursday. Although small differences were found between the two groups, only Thursdays rated as statistically different based upon Mann-Whitney and two tailed T-test results.

Additional Convenience Features

Based upon frequency of selection, "course/training fee waived" was the number one choice both overall and when split into rural and urban respondents (Table 4). The second item of choice was free parking. This item was also second for urban respondents. Rural respondents selected technical support for those service delivery methods involving the use of computers as their second choice. Technical support was both third overall and third in the rankings for urban respondents. The last two items, transportation and childcare displayed consistent results for all groupings.

Following this area, a freeform question was presented to see if respondents would identify any additional convenience features not previously mentioned. In examining the free-form results, two small trends emerged. Among urban based respondents, offering flexibility in terms of days/times was a reoccurring theme. For those outside Winnipeg, regardless of urban or rural location, respondents requested local availability of courses. This ties into the delivery method findings.

Web Portal

Respondents in this section rated their likelihood of using a "web portal", which included both government and private resources relating to women entrepreneurs, as 3.99 (which approximates 4 on the scale) indicating a slight likelihood they would use this type of tool.

Breaking this result into urban and rural respondents, there is a statistically significant difference between these two groups. Using a Mann-Whitney test, the Z score result equalled -2.180 which is significant at the .05 level. A T-test test confirmed this significant difference with a result of 2.087.

Upon further examination of the urban group with a mean of 4.20, this group is more likely to use a web portal resource. The rural group exhibited a lower mean of 3.58 indicating that this group comparatively is less likely than the urban group to use this resource.

Upon examining the frequency of responses related to this question, an interesting result appears. Of the 91 responses to this question, 46 or 50.5% of the respondents indicated they were likely to use this resource.

INTERPRETATION OF RESULTS

Service Needs

Through this exploratory study, a clearer picture of the needs of participating Manitoba women entrepreneurs has been uncovered. The number one topic of service need identified in this study, "finding new customers" corresponds with Alpander et al. (1990) study. Upon further examination of the remainder of Alpander et al. ten topic listing, it appears that the needs of entrepreneurs have evolved over time as only one other service item: planning for market expansion, of this initial 10 item list was replicated by this study's findings. As the Alpander et al. study focused on businesses in their first three years of business, a post hoc analysis was performed to see if years in business, instead of entrepreneurial stage could explain any of these differences.

An ANOVA analysis using the survey instrument's four categories: less than 1 year, 1 to 3 years, 4 to 5 years and over 5 years, indicated only one item associated with Alpander et al. initial listing, "dealing with government agencies" (2.845), may have a different result related to a difference in business years. Taxation (3.541) and accounting and bookkeeping (4.341) needs, although not included in Alpander et al. listing, also produced statistically significant differences based on years in business. Post hoc, tukey analysis indicated these

differences were between less than 1 year in business and over 5 years for accounting and bookkeeping and less than 1 year and 4-5 years for government agencies and taxation.

Additional analysis using a two tailed T-test was performed using a two category split: less than three years in business and three years and over. Here, additional differences appear. The areas of cash flow management (-2.156), budgeting (-2.360), accounting and bookkeeping (-3.243), and business planning (-2.147) all show statistically significant differences, with the more established business owners placing an increase level of need (rating of 3+) on these items compared to less established owners (all under 2.4). One area "buy/sell an established business" had an inverse result as those with years fewer than three placed more need importance (2.81) than those in business three years or more (1.95). Thus, in some areas business area needs change and evolve as a business ages.

Examining the other service needs identified in the literature: instability of demand (Carrington 2006), market/competitive assessment (Orser & Riding, 2006), marketing in general (Ganesan et al., 2002; Kalyani & Chandralekha, 2002), management of working capital (Ganesan et al., 2002), accounting (Lorrain & Laferte, 2006), budgeting (Nelson, 1987), taxation (Carrington, 2006; Nelson, 1987) government regulations (Prime Ministers Task Force, 2003), time management (Lorrain & Laferte, 2006), balancing life and family (Orser & Riding, 2006), stress management skills (Lorrain & Laferte, 2006), negotiation skills (Ganesan et al., 2002), networking (Ganesan et al., 2002; Krishna, 2003; Langowitz et al., 2006; Menzies et al., 2006; Merrett & Gruidl, 2000; Miaoulis et al., 2005; Pages, 2005; Totterman & Sten, 2005; Witt, 2004), finding mentors/mentorship (Langowitz et al., 2006; Miaoulis et al., 2005; Merrett & Gruidl, 2000; Pages, 2005), business plan (Katerina & Trihopoulou, 2005; Nelson, 1987, Orser & Riding, 2006), strategic planning (Kickul et al., 2007) and growth tools (Orser & Riding, 2006), the importance of all of these areas was confirmed to be one of importance to Manitoba's women entrepreneurs. There were however areas where a different level of need was exhibited. In addition to those already identified from Alpander et al. listing, two additional areas: delegation (Krishna, 2003) and production/operations (Kickul et al., 2007) were not confirmed by this study to be important topic/training areas to Manitoba women entrepreneurs.

Although it could be determined that years in business does produce some significant differences in entrepreneurial service needs, when comparing results based upon self entrepreneurial stage evaluation this study's results are contrary to previous research as few significant differences were identified (only two topics of 36). This study's analysis however was limited as too few respondents in two of the four categories lead them to be omitted from this analysis. Thus, caution must be used in interpreting this result as further research and an expanded sample may produce significantly different results. In addition to the small number of respondents exhibited in this study, an expanded study section including the characteristics of each stage may aid the respondent further and in some cases may change their self entrepreneurial stage identification. The result of years in business compared to business stage indicates that more work is needed in this area before more conclusive results can be produced.

Growth and Exporting

Manitoba women entrepreneurs have a focus on growth as evident not only by their entrepreneurial stage evaluation but also by the importance placed on growth benefits and tools, ranking as their second overall service need topic. These findings lead to the conclusion that Manitoba's women entrepreneurs are poised for future growth as according to the findings of Orser and Hogarth-Scott (2002) "business owners' intention to pursue growth leads to subsequent growth". If these entrepreneurs take advantage of, and entrepreneurial support agencies offer services in this area, higher growth rates can be achieved in Manitoba based on Ganesan et al.'s (2002) findings.

Although based on this study's findings respondents place themselves into the growth category and select this as an important topic, future work promoting growth benefits and tools still needs to be done, as this topic appeared in only one of the top 5 priority listings for the rural group only and not the urban group. Another related notable item is the lack of interest in exporting; an area and method often used in firm growth, as evidenced not only by its absence from the overall key service topic listing but also from the top 5 service listings. This finding related to the lack of interest in exporting, corroborates Orser's (2007) previous findings that women business owners are less likely to export/trade in international markets.

Rural Considerations

According to this study's findings, Manitoba's rural women entrepreneur respondents are more similar than they are different when compared to urban women entrepreneurs. In terms of "needed" service topic areas, one significant difference was found overall. How to find mentors and role models appeared as a needed item overall but rural respondents identified this item as slightly needed. This finding appears to be at odds with the findings of the 2005 study "Changing needs of Rural and Northern Women in Manitoba" which identified lack of mentors and networking opportunities as a barrier to rural Manitoba women.

In the top 5 service topic listings, a few more subtle differences were found. Although the top 2 priority items were identical between urban and rural respondents, a few of the remaining priority items were not specifically: dealing with demand instability, time management skills, government agencies, growth tools and negotiating skills. These top 5 differences may be of interest to those organizations trying to specifically target rural areas. Some of these findings tie in with the David Bruce (2000) study which identified growth and expanding sales markets beyond their communities as rural community challenges. It is worth noting here that the frequency for these items in terms of the total compared to number of rural respondents was quite low, which lead to the recommendation for additional research in this area to confirm or expand on these results.

In the areas of service delivery methods, no statistically significant differences were found. However, of the top 5 delivery service methods, two rural methods relating to technology were included. "CDs" and "Online training at own pace" vs. one "online training at own pace" for the urban group. As the frequency response rate in this section overall was very low, additional research in this area is warranted to confirm or further expand these findings.

Technology, based on comments noted on a few of our rural respondents surveys, specifically access to high speed internet, indicates that this continues to be a challenge for some rural entrepreneurs even though the majority of rural respondents did have high speed internet access. This challenge identified in previous research appears to still be a barrier to some rural Manitoba entrepreneurs today. This barrier also limits the Manitoba rural women entrepreneurs' ability to participate in e-learning opportunities such as the online courses and use of a resource such as a women entrepreneurial focused web portal.

In terms of planning training and service offerings targeted at Manitoba rural women entrepreneurs, they prefer evenings with Monday being their first choice day of the week. The only significant difference in terms of convenience features identified was rural entrepreneurs' placing a higher priority on technical support when the delivery method used involves technology.

Delivery Methods and Other Considerations

Literature indicates that convenience and delivery methods are key considerations in increasing participation rates in training and service offerings. Overall, Manitoba's women entrepreneurs prefer personal contact related delivery methods. Four of the top five preferred delivery methods focused on personal contact (Table 4). This finding agrees with previous findings of the Womenable (2007) study on missing middle women entrepreneurs. In terms of technology related service delivery methods at own pace, "online course" was ranked 4 out of 13. The majority of technology related items placed lower than 5 out of 13.

The most popular slot for scheduling training and other events was a Tuesday morning. For convenience, Manitoba women entrepreneurs would like to have the associated fee waived, free parking and technical support if technology is involved.

The use of a web portal, as suggested by the Prime Ministers Task Force on Women Entrepreneurs (2003), met with mixed reviews. In general, over half of the women participating indicated they were likely to use this resource. However, the overall average results indicate that the average respondent is only slightly likely to use such a resource. As limited information and detail was provided to respondents regarding the web portal, additional information and further clarification of potential content and resources may dramatically change this preliminary result. Overall however, there does appear to be some preliminary interest in such a resource.

CONCLUSIONS AND PRACTICAL IMPLICATIONS

This study's aim was to expand the limited base of research on women entrepreneurs in Canada and as such has implications for researchers, educators and entrepreneurial support practitioners. By specifically looking at the type of service support/topics women entrepreneurs wish to obtain and their preferred delivery methods, these findings will aid organizations that support women entrepreneurs in better serving this groups needs.

Overall, women entrepreneurs face a wide variety of barriers and challenges throughout the life of their entrepreneurial venture. This research has identified the key areas of service interest for Manitoba women entrepreneurs. Its evidence reveals that regardless of location (urban vs. rural), women entrepreneurs training and support needs are not significantly different. Consequently, Manitoba women entrepreneurs do not lack common ground but in fact share many of the same basic concerns and issues. Furthermore, Manitoba women entrepreneurs are poised for growth as their top three service needs indicate they are interested in developing their skills related to expanding their business. If and when their needs are met, previous research has indicated that these entrepreneurs will experience improved economic performance and venture growth.

Upon examining service needs by years in business, some differences in service needs were found between those entrepreneurs with less than 3 years of experience vs. those with 3 years or more. Splitting entrepreneurs by entrepreneurial stage, no significant differences were noted. It must be noted that these findings are limited due to a lack of respondents in two of the four categories and thus limited analysis could be performed.

Looking at service delivery and convenience items, although a few more differences appear, no statistically significant differences were found. Although it is not possible to design a one fit system, evidence from this study suggests that offering training/services focused on the more common set of service needs is needed. These would need to be offered with some understanding of the evolving needs of entrepreneurs based on years in business, combined with sensitivity to delivery method and convenience preferences based upon entrepreneurial location.

This research study was designed as an exploratory study, aimed at identifying Manitoba women entrepreneurs' service area and delivery method priorities and to identify the differences between urban and rural women entrepreneurs. Not only was it designed for these purposes, but also to generate further interest in this important area of study.

Some suggested areas for future research included the replication of this study across Canada and the United States to determine if these findings may be generalized. Given the low number of respondents in the nascent and start up categories additional research is needed to further identify each group's service needs and delivery priorities and to further compare urban and rural respondents.

As this study's evidence indicates, Manitoba women entrepreneurs are growth focused but one potential method of growth, exporting appeared to be of little need to our group of respondents. Additional research needs to be done in this area. Previous research has been done on why women entrepreneurs are hesitant to participate in exporting, and evidence obtained from this study further corroborates this. As exporting can offer expanded markets, new customers, and growth, all areas important to Manitoba women entrepreneurs, additional research needs to be done on how to generate export interest amongst women entrepreneurs.

Another area of research could be a study focused solely on service delivery mechanisms. A study with such a focus may improve response rates over this combined study and will provide further insight into how women entrepreneurs wish to receive services.

Given the level of interest in a women entrepreneur web resource portal found in this study additional research into desired content and resources would be recommended.

Although there is much research work still to be done in the area of both urban and rural women entrepreneurs, it is hoped that this study has provided some additional insight into women entrepreneurs' support needs.

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Int. Journal of Business Science and Applied Management, Volume 6, Issue 2, 2011

A structural model of customer satisfaction and trust in vendors involved in mobile commerce

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Abstract

The purpose of this paper is to provide an explanation of factors influencing customer satisfaction and trust in vendors involved in mobile commerce (m-commerce). The study sample consists of 200 respondents. Data were analyzed by employing structural equation modelling (SEM) supported by AMOS 5.0 with maximum likelihood estimation in order to test the proposed hypotheses. The proposed model was empirically tested and results confirmed that users' satisfaction with vendors in m-commerce was not significantly influenced by two antecedents of the vendor's website quality: interactivity and customisation, and also two antecedents of mobile technology quality: usefulness and ease-of-use. Meanwhile, users' trust towards the vendor in m-commerce is affected by users' satisfaction with the vendor. Interestingly, vendor quality dimensions such as responsiveness and brand image influence customer satisfaction with vendors in m-commerce. Based on the findings, vendors in m-commerce should focus on the factors which generate more satisfaction and trust among customers. For vendors in general, the results can help them to better develop customer trust in m-commerce. Vendors of m-commerce can provide a more satisfying experience for customers.

Keywords: mobile, m-commerce, trust, Satisfaction, structural equation modelling

1 INTRODUCTION

Mobile commerce, or e-commerce using mobile devices and now known as m-commerce, has become a major topic of interest for the IS research community and a key priority for many business organizations (Ropers, 2001). Scholars and industry representatives are turning their attention towards the promise of electronic wireless media, envisaging that the next - or the real phase of e-commerce growth will be in the area of mobile commerce (Bertrand, Caplan, Chab, Fernandez-Moran, & Letelier, 2001; Kalakota & Robinson, 2001; Keen & Mackintosh, 2001; Varshney & Vetter, 2001; Varshney, Vetter, & Kalakota, 2000). Olla, Patel and Atkinson (2003) stated that m-business is mobile Internet applications on ubiquitous mobile networks allowing real-time, anywhere, anytime connectivity to services. This means that customers, partners and employees should be able to access information resources and services of a company wherever and whenever they want (Steendern, 2002).

There is growing demand in the business environment for mobility. eDigitalResearch and Portaltech (2011) found that over one quarter (28%) of users use their Smartphone to shop, browse and research products via their phones. The mobile commerce site of Dover Saddlery Inc., a multichannel retailer of equestrian products, has had a dramatic increase in mobile visitors to their site. This has resulted in 3.3% of total visitors in November 2010 coming from mobile devices, 3.4% in December 2010 and 3.6% in January 2011 (Siwicki, 2011). Every company entering the mobile marketplace has the same goal: leveraging this channel to create customer value (Kalakota & Robinson, 2001). Prior research has identified trust as a research issue in both e- and m-commerce (Hsu & Lu, 2005; Hsu, Lu, & Hsu, 2007; Lai, 2004; Siau & Shen, 2003). Other studies have examined a variety of topics, including the impact of satisfaction on loyalty in m-commerce (Lin & Wang, 2006), factors affecting satisfaction in m-commerce (Choi, Seol, Lee, Cho, & Park, 2008) and the effect of culture on satisfaction (Cyr, Kindra, & Dash, 2008). Relevant to the studies, Li and Yeh (2009) found that the level of satisfaction is a key determinant of gaining customer trust in m-commerce. Hence, this study aims to provide an explanation of the factors that build customer trust towards vendors using m-commerce.

This paper is structured as follows: Section 2 presents the model employed in this study, focusing on the rationale of the constructs used and deriving testable hypotheses. Section 3 describes the research methodology. The next section presents the results and discussions sections. The paper rounds off with conclusions and an agenda for future research in this area.

2 LITERATURE REVIEW

Perceived Quality of Mobile Services

In the marketing field Parasuraman, Zeithaml, and Berry (1985) argued that service quality is based on a comparison between what the customer feels should be offered and what is provided. Wang and Liao (2007) included the construct of service quality as one of the dimensions affecting customer satisfaction in m-commerce. Lin and Wang (2006) extended SERVQUAL satisfaction with trust and perceived value, and examined customer loyalty in m-commerce. Feng, Hoegler, and Stucky (2006) suggested that m-commerce is more than e-commerce due to its different interaction style, usage pattern and value chain. Feng *et al*. (2006) stated that m-commerce is a new and innovative business opportunity with its own unique characteristics and functions, such as mobility and broad reach ability. Tiwari and Buse (2007) stated that m-commerce is an integral subset of m-business since the services provided by m-business cover both commercial and non-commercial areas. For usage-dependent contractual goods, a long-term relationship with customers is important for service providers (Gerpott, Rams, & Schindler, 2001). For this reason customer-oriented marketing strategies are essential for mobile service carriers to retain their customers (Kim, Park, & Jeong, 2004).

Trust

Trust is the confidence in the other's goodwill and can also be viewed as being a consensual ideology (Ring & Van de Ven, 1992). The benefits of a relationship based on trust are that it economises on information and commercial transaction costs and creates the condition where exchanges between technologically and legally separate entities can take the form of problem solving rather than bargaining (March & Simon, 1958). Lee (2005) stressed the importance of responsiveness in leading to trust in m-commerce. Expectations are described as the beliefs developed by the consumer relative to the characteristics of a product or service before the purchase (Evrard, 1993). According to Siau and Shen (2003) trust in m-commerce (m-trust) can be divided into two categories: trust in mobile technology and trust in mobile vendors. Lee and Benbasat (2003) and Chae and Kim (2003) agreed that limited system resources (e.g. smaller screens and lower multimedia processing capabilities) can hinder the development of trust in m-commerce.

Since there is no consensus on the nature of quality dimensions, it is necessary to identify the quality dimensions considered important by customers in m-commerce, these include web site quality, mobile technology quality and vendor quality.

Web Site Quality

Satisfaction in the open market depends on transaction experiences (Ha & Liu, 2010). Customers' perception of satisfaction during the use of mobile technology is influenced by mobile business applications that involve interactivity and customisation (Liang and Wei, 2004). Interactivity and customisation interact to influence customers' perceptions of satisfaction during the use of mobile technology (Liang & Wei, 2004). Venkatesh *et al.* (2003) further suggested that customisation's impact can be extended to enhance the mobile interface design and to improve mobile usability, thus raising the level of satisfaction. Accordingly, this study hypothesizes that:

H_1. Interactivity significantly affects satisfaction with the vendor in m-commerce.
H_2. Customisation significantly affects satisfaction with the vendor in m-commerce.

Mobile Technology Quality

Usefulness and ease-of-use are the two vital elements in the Technology Acceptance Model (TAM) that influence individuals' attitudes towards using the system (Davis, 1989). These elements were shown to be closely related to the acceptance of computer technologies (Davis, 1989; Venkatesh & Davis, 2000) and are of great importance for new users (Gefen & Straub, 2000). Perceived ease of use has been considered as an important determinant in adoption of past information technologies such as intranet (Chang, 2004), 3G (Liao, Tsou, & Huang, 2007), online banking (Guriting & Ndubisi, 2006; Jahangir & Begum, 2008), wireless Internet (Lu, Yu, Liu, & Yao, 2003), Internet commerce (Cho, Kwon, & Lee, 2007) and m-commerce (Lin & Wang, 2005; Kurnia, Smith, & Lee, 2006; Luarn & Lin, 2005; Mallat, Rossi, Tuunainen, & Oorni, 2006; Wang & Barnes, 2007). Based on a review of empirical evidence, usefulness and ease-of-use may positively affect satisfaction (Ribbink, Van Riel, & Liljander, 2004). Therefore, this study posits:

H_3. Usefulness significantly affects satisfaction with the vendor in m-commerce.
H_4. Ease-of-use significantly affects satisfaction with the vendor in m-commerce.

Vendor Quality

Responsiveness and brand image are possible sources of perceived vendor quality. The first represent an e-retailer's commitment to providing rapid feedback (Dholakia, Miao, Dholakia & Fortin, 2000; Ku, 1992) or generally refer to being responsive to the service subscribers (Heeter, 1989). Its applications can be found in different areas of e-commerce such as web-based services (Kuo, 2003), Internet retailing (Barnes & Vidgen, 2001) and electronic banking (Zhu *et al*., 2002). The latter acts as a diagnostic tool for uncovering areas of service quality strengths and shortfalls (Kettinger & Lee, 1997, 1999; Pitt, Watson, & Kavan, 1995; Van Dyke, Kappelman & Prybutok, 1997). A high level of responsiveness, representing a trust cue, can convey the trustworthiness of the vendor in m-commerce to customers (Corritore, Kracher, & Wiedenbeck, 2003). Therefore, the study hypothesizes that:

H_5. Responsiveness significantly affects satisfaction with the vendor in m-commerce.

Brand image is the other possible source of vendor quality, this involves more than just a name given to a product. Similar classifications of brand image distinguish product-related and non-product-related attributes, as proposed by Keller (1998) and Aaker (1997). While the former refers to the components of the core product or function sought by customers, the latter are external to the function or process of the product or the service provided (Keller, 1998). These two attributes can be formed from customers' own experiences with the brand or through the image portrayed via marketing channels (O'Cass & Grace, 2004). Geyskens, Steenkamp, Scheer, and Kumar (1996) suggested ease of relationships with service operators can improve the level of satisfaction. Accordingly, it seems that a strong image will lead to better customer satisfaction. Hence, the study hypothesizes that:

H_6. Brand image significantly affects satisfaction with the vendor in m-commerce.

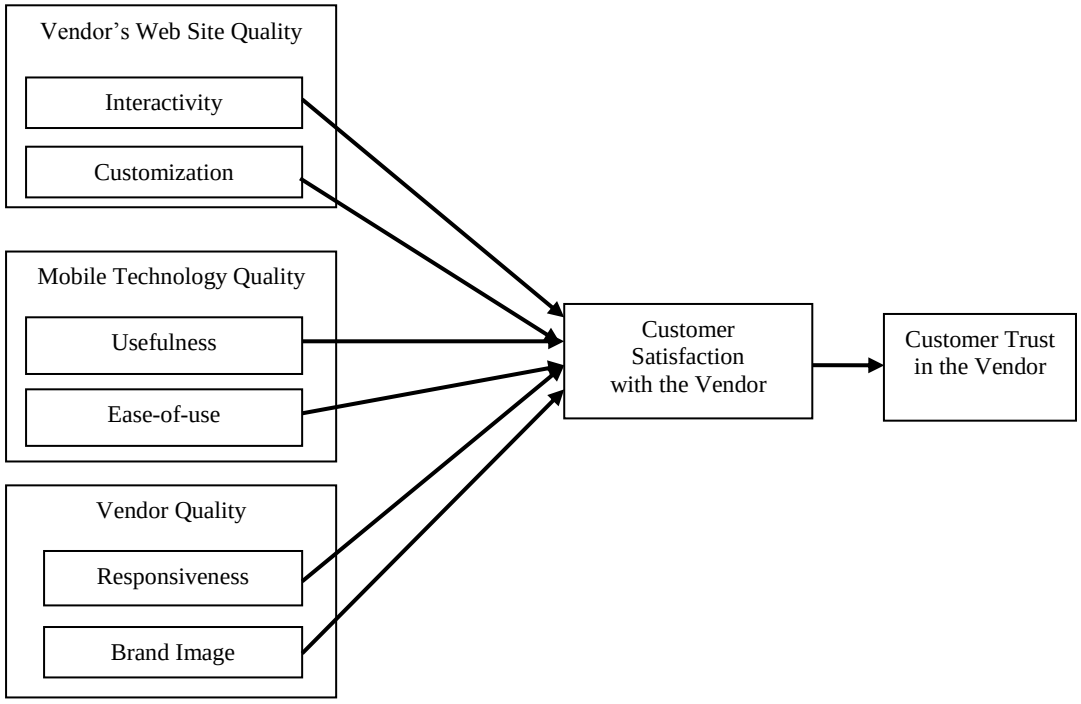
Satisfaction

Geyskens, Steenkamp and Kumar (1999) stated that satisfaction can be raised by economic conditions (e.g. monetary benefits) or psychological factors (e.g. promise fulfilment or ease of relationship with retailers).

Consequently, the consumer's post-trust level is affected directly by the level of satisfaction (Singh & Sirdeshmukh, 2000). Past research has suggested that customer satisfaction is the antecedent of trust (Garbarino & Johnson, 1999; Pavlou, 2003). When performance is worse than expected, a low level of satisfaction occurs because of negative disconfirmation (Yi, 1990). When customers make transactions with the vendor, they may have different reactions towards the transaction, thus affecting overall satisfaction (Spreng, MacKenzie & Olshavsky, 1996). Chae, Kim, Kim & Ryu (2002) and Li & Yeh (2009) found factors affecting quality of service in m-commerce have an impact on behavioural intention to use 3G services through improved levels of satisfaction. Satisfaction was the fundamental performance variable affecting customer perceptions with regard to m-commerce (Siau, Sheng, Nah & Davis, 2004; Yeh & Li, 2009). In addition, customer acceptance leads customers to use m-commerce, subsequently customer satisfaction is built (Lee, Lee & Park 2007). The most powerful trust emerges from positive customer experiences, whilst knowledge-based trust has the strongest impact on customer satisfaction (Yoo, Lee & Julian Hoffmann, 2008). Hence, the study posits:

H_7. Satisfaction significantly affects trust in the vendor in m-commerce.

Figure 1: Theoretical Framework



3 METHODOLOGY

Two hundred questionnaires were distributed to students conveniently sampled at a higher learning institution in the Federal Territory of Labuan, Malaysia. It took a week to complete the data collection. Convenience sampling does have limitations, however, as the sample is not representative of the total population. Consequently there is a constant difference between the results from the sample and the theoretical results from the entire population. The scale items for web site quality (i.e. interactivity and customisation) were adapted from Lee (2005) and Ribbink et al. (2004). The scale items for mobile technology quality (i.e. usefulness and ease-of-use) were taken from Davis (1989). Items for vendor quality (i.e. responsiveness and brand image) were adapted from Parasuraman et al. (1985) and Hsieh and Li (2008). The constructs for satisfaction and trust were adapted from Lin & Wang (2006), Hsu et al. (2007) and Heijden et al. (2003). Hence, the items selected represent the concepts in the empirical model under investigation and ensure the content validity of the scales. Appendix 1 shows the detailed constructs in the proposed model. The questionnaires were designed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data were collected and analysed using structural equation modelling (SEM) supported by AMOS 5.0 with maximum likelihood estimation in order to test the proposed hypotheses. SEM is a second-generation multivariate

technique that combines multiple regressions with confirmatory factor analysis to estimate simultaneously a series of interrelated dependence relationships. SEM is a widespread technique in several fields including marketing, psychology, social sciences and information systems (Hull et al., 1991; Methlie & Nysveen, 1999; Seibert et al., 2001).

Data Analysis

Table 1 summarizes the socio-demographic profile of the sample. There were 200 students who participated in the survey with 82 of them males and 118 females. Eighty eight percent of the students, or 176 of them, are between the age of 19-23 and the remaining 12 percent of the students, 24 of them, are aged between 21-24 years. The survey revealed that 196 respondents are degree pursuers and 4 of them hold Masters Degrees. Seventy eight percent are cell phone users, 16 percent are PDA phone users and 6 percent are Smartphone users. These technologies are being used more and more as an essential lifestyle accessory. This allows companies to increase the number of touchpoints with their customers, and to drive increased sales in order to generate a dramatic increase via Smartphone apps. The survey shows that 29 percent have experienced 1-3 types of m-commerce experiences, 33 percent have experienced 4-6 types, and 38 percent have experienced more than 7 types of m-commerce.

Table 1: Socio-demographic Profile of Respondents

Variable		Frequency	Percent
Gender	Male	82	41.0
	Female	118	59.0
Age	19-23	176	88.0
	24-28	24	12.0
Highest Education Level	Undergraduate	196	98.0
	Masters	4	2.0
Wireless Handheld Equipment Type	Cell Phone	156	78.0
	PDA Phone	32	16.0
	Smart Phone	12	6.0
Number of M-Commerce Experience	1-3 years	58	29.0
	4-6 years	66	33.0
	> 7 years	76	38.0

Structural Equation Modelling

The results of SEM include two components: the measurement model and the structural model. The measurement model, giving relationships between latent variables and observed variables, aims to provide reliability and validity based on these variables. The structural model studies path strength and the direction of the relationships among the latent variables.

The Measurement Model

A confirmatory factor analysis (CFA) using AMOS 5.0 was conducted to test the measurement model. It is necessary to test that the measurement model has a satisfactory level of validity and reliability before testing for a significant relationship in the structural model (Fornell & Larcker, 1981; Ifinedo, 2006). The psychometric properties of the measurement model in terms of reliability, convergent validity and discriminant validity were evaluated (see Table 2).

Table 2: Reliability and Item Loadings

Constructs	Items	Standardized Loadings	Composite Reliability	Average Variance Extracted
Interactivity	I1	.660	0.963	0.897
	I2	.861		
	I3	.754		
Customisation	C1	.807	0.976	0.931
	C2	.892		
	C3	.782		
Usefulness	U1	.900	0.980	0.961
	U2	.871		
Ease of Use	EU1	.835	0.982	0.947
	EU2	.908		
	EU3	.821		
Responsiveness	R1	.826	0.979	0.939
	R2	.914		
	R3	.799		
Brand Image	BI1	.848	0.974	0.925
	BI2	.820		
	BI3	.763		
Trust	T1	.848	0.979	0.941
	T2	.822		
	T3	.812		
Satisfaction	S1	.824	0.978	0.958
	S2	.848		

Construct Reliability

Composite reliability (CR) was used to measure the reliability of a construct in the measurement model. CR offers a more retrospective approach of overall reliability and estimates consistency of the construct itself including the stability and equivalence of the construct (Hair, Black, Babin, Anderson, & Tatham, 2010). The formula to calculate CR is $(\Sigma\text{standardized loading})^2 / (\Sigma\text{standardized loading})^2 + \Sigma\varepsilon j)$ (where ε = error variance and Σ is summation). A value of 0.70 or greater is deemed to be indicative of good scale reliability (Hair et al., 2010). Table 2 portrays the result of the calculated composite's reliability to support construct reliability. The reading of composite reliability of all latent variables is above 0.70 and suggests that all latent variables have good reliability.

Convergent Validity

Convergent validity shows the extent to which indicators of a specific construct converge or have a high proportion of variance in common (Hair et al., 2010). This validity was measured using standardized factor loadings. The factor loadings of latent to observed variables should be above 0.50 (Byrne, 2001, 2006; Hair et al., 2010). The result of the confirmatory factor analysis in Table 2 shows that the standard regression weight or standard factor loadings of all observed variables are adequate ranging from 0.660 to 0.914. This finding indicates that the constructs conform to construct convergent validity.

Discriminant Validity

Discriminant validity shows the extent to which a construct is truly distinct from other constructs (Hair et al., 2010). A commonly used statistical measure of discriminant validity is a comparison of the Average Variance Extracted (AVE) value with correlation squared (Fornell & Larcker, 1981). To satisfy the requirements of discriminant validity, the AVE of two constructs must be more than the square of the correlation between the given two constructs. The formula to calculate discriminant validity is Variance Extracted (VE) = $(\Sigma\text{standardized loadings}^2 / \Sigma\text{standardized loadings}^2 + \Sigma\varepsilon j)$ (where ε = error variance and Σ is summation). Table 3 demonstrates the average AVE, the latent variable correlations and the square root of the AVE. The square root of the AVE is shown on the diagonal of the table. No correlations were equal to or greater than the square root of the AVE indicating there was discriminant validity. Each AVE value is found to be more

than the correlation square, thus discriminant validity is supported, or in other words multicollinearlity is absent (Byrne, 2001).

Table 3: Correlation between the Factors

	1	2	3	4	5	6	7	8
(1) Interactivity	.947							
(2) Customization	.615(**)	.965						
(3) Responsiveness	.561(**)	.687(**)	.969					
(4) Brand image	.514(**)	.558(**)	.485(**)	.962				
(5) Satisfaction	.483(**)	.594(**)	.618(**)	.631(**)	.979			
(6) Trust	.530(**)	.665(**)	.638(**)	.706(**)	.759(**)	.970		
(7) Ease of use	.340(**)	.426(**)	.373(**)	.469(**)	.549(**)	.541(**)	.973	
(8) Usefulness	.379(**)	.425(**)	.361(**)	.468(**)	.516(**)	.562(**)	.742(**)	.980
Mean	3.270	3.287	3.113	3.240	3.185	3.287	3.373	3.380
Std. Deviation	0.828	0.894	0.893	0.764	0.884	0.789	0.861	0.836

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

The Structural Model

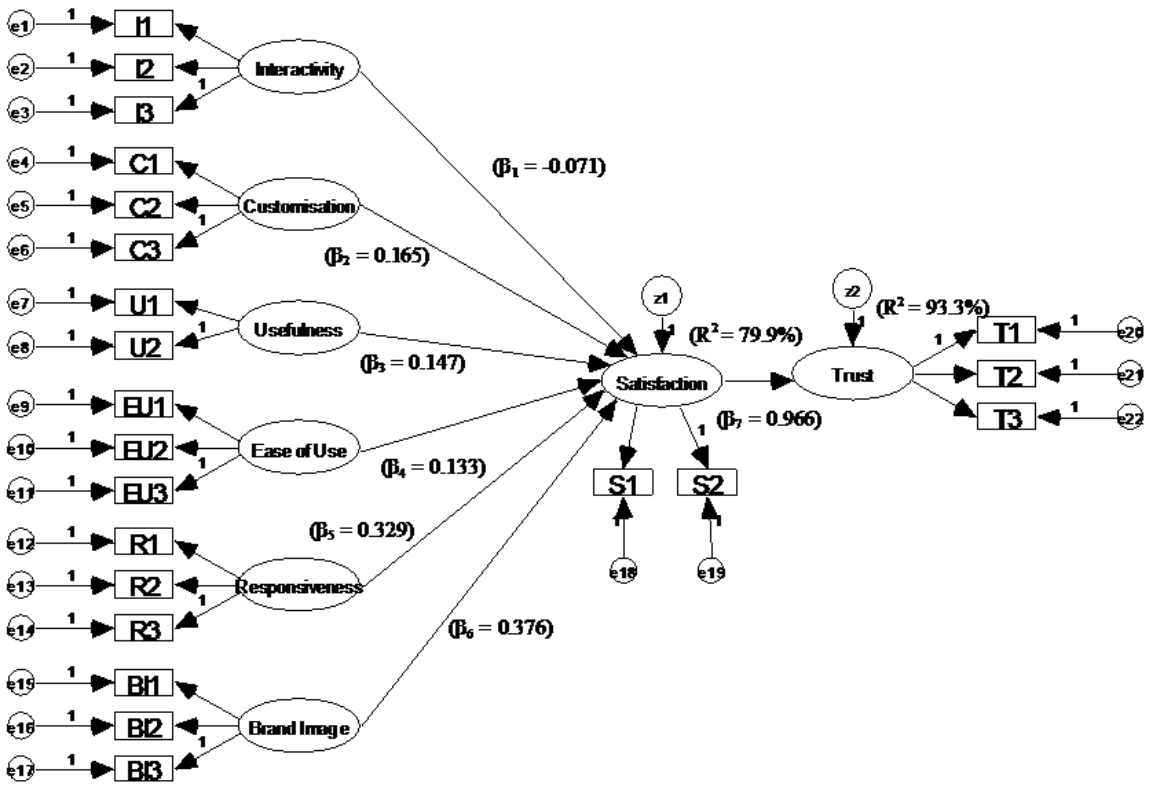
The test of the structural model was performed using SEM in order to examine the hypothesized conceptual framework by performing a simultaneous test. Table 4 depicts that the goodness-of-fit for the model was met: Chi-square/df = 2.121, CFI = 0.945, GFI = 0.868, AGFI = 0.807, NFI = 0.902, and RMSEA = 0.075. The overall values provided evidence of a good model fit. All of the model-fit indices exceed the respective common acceptance levels suggested by previous research, following the suggested cut-off value, demonstrating that the model exhibited a good fit with the data collected. Thus it was possible to proceed to examine the path coefficients.

Properties of the causal paths for the structural model (standardized path coefficients (β), standard error, and hypotheses result) are signified in Table 5. The number of distinct sample moments for the model is 253. The number of distinct parameters to be estimated is 80 and degrees of freedom is 173. The level of significance (α) was set at 0.05. The square multiple correlation for the structural equations index connotes that the predictors interactivity, customisation, usefulness, ease of use, responsiveness, and brand image have together explained 79.9% of the variance in satisfaction. In other words, there are other additional variables that are important in explaining satisfaction and trust that have not been considered in this study.

Table 4: Goodness-of-fit Indices for Structural Model

Fit Indices	***Accepted Value***	***Model Value***
Absolute Fit Measures		
χ^2 (Chi-square)		*366.950*
df (Degrees of Freedom)		*173*
Chi-square/df (χ^2/df)	*< 3*	*2.121*
GFI (Goodness of Fit Index)	*> 0.9*	*0.868*
RMSEA (Root Mean Square Error of Approximation)	*< 0.10*	*0.075*
Incremental Fit Measures		
AGFI (Adjusted Goodness of Fit Index)	*> 0.80*	*0.807*
NFI (Normed Fit Index)	*> 0.90*	*0.902*
CFI (Comparative Fit Index)	*> 0.90*	*0.945*
IFI (Incremental Fit Index)	*> 0.90*	*0.946*
RFI (Relative Fit Index)	*> 0.90*	*0.869*
Parsimony Fit Measures		
PCFI (Parsimony Comparative of Fit Index)	*> 0.50*	*0.708*
PNFI (Parsimony Normed Fit Index)	*> 0.50*	*0.676*

Figure 2: The Result of Proposed Research Model (Standardized Path Coefficients)



Hypotheses 1 and 2 postulate the associations between satisfaction with the vendor or the service/application in m-commerce and two antecedents of vendor's website quality: interactivity and customisation. Hypotheses 3 and 4 propose the associations between satisfaction with the vendor or the service/application in m-commerce and two antecedents of mobile technology quality: usefulness, and ease-of-use. As evident in Table 5, satisfaction of vendors or the service/application in m-commerce were not significantly influenced by the two antecedents of vendor's website quality: interactivity (β_1 = -0.071) and customisation (β_2 = 0.165). The two antecedents of mobile technology quality: usefulness (β_3 = 0.147) and ease-of-use (β_4 = 0.133) also had insignificant results as p>0.05. All in all, Hypothesis 1 to 4 targeting the vendor or the service/application, which then impacts on the vendor. Hence, the proposed hypotheses are not supported, p>0.05.

Table 5: Summary of Hypotheses Testing Results

Path			Estimate (β)	S.E.	C.R.	*p*	Results
Satisfaction	<---	Interactivity	-.071	.084	-1.008	.313	Not Supported
Satisfaction	<---	Customisation	.165	.109	1.629	.103	Not Supported
Satisfaction	<---	Usefulness	.147	.100	1.610	.107	Not Supported
Satisfaction	<---	Ease of Use	.133	.092	1.514	.130	Not Supported
Satisfaction	<---	Responsiveness	.329*	.087	3.896	.000	Supported
Satisfaction	<---	Brand Image	.376*	.088	5.315	.000	Supported
Trust	<---	Satisfaction	.966*	.078	11.603	.000	Supported

*Note: β = standardised beta coefficients; S.E. = standard error; C.R. = critical ratio; *p< 0.05*

Hypothesis 5 and 6 explicate the associations between users' satisfaction with the vendor in m-commerce with two antecedents of vendor quality: responsiveness and brand image. This study asserts that users' satisfaction with the vendor in m-commerce includes two dimensions of vendor quality: responsiveness and brand image. Table 5 depicts that users' satisfaction with the vendors using m-commerce is significantly influenced by vendor quality dimensions such as responsiveness and brand image ($\beta_5 = 0.329$, $\beta_6 = 0.376$, $p<0.05$), respectively. Evidently, this study asserts that users' satisfaction with the vendor in m-commerce ($\beta_7 = 0.966$) significantly influences trust in the vendor in m-commerce, supporting H_7. Accordingly, 93.3% of the variance in trust in the vendor of m-commerce has been explained, indicating that the explanatory power of the model may be considered satisfactory and that the model fits the data and is appropriate to test the hypothesis.

CONCLUSION

This research examines the factors that influence customer satisfaction and trust in the vendor or the service/application of m-commerce. The study confirms that satisfaction with the vendor or the service/application in m-commerce was not significantly influenced by two antecedents of vendor's website quality: interactivity and customisation, and also two antecedents of mobile technology quality: usefulness and ease-of-use. Vendors on the mobile Internet can provide a more satisfying experience for customers by emphasizing other m-quality factors than these four factors as it does not contributed to the formation of satisfaction in the vendor or the service/application of m-commerce. The findings also reveal that users' trust in the vendor or the service/application of m-commerce is affected by their satisfaction with the vendor or the service/application of m-commerce. Align with past studies, satisfaction is an important determinant of customer trust (Chae, Kim, Kim & Ryu, 2002; Li & Yeh, 2009; Yeh & Li, 2009). Surprisingly, vendor quality dimensions such as responsiveness and brand image does influence customer relationships with the vendor in m-commerce. These were affected by vendor benevolence (brand image) and service honesty (responsiveness). Reminiscent of previous findings (Lee, 2005; Corritore *et al.*, 2003; Yeh & Li, 2009) the results indicated that responsiveness did directly lead to satisfaction. This may be because m-commerce customers were more concerned with vendor service honesty (responsiveness) (Ratnasingham & Kumar, 2000). As in the studies by Berry (2000), Liang &Wei (2004) and Parasuraman et al. (1985), web site and vendor quality influenced customer satisfaction. Customers should be satisfied with the vendor services in m-commerce in order to gain trust and remain loyal to them. Moreover, this study has validated the determinants of satisfaction and trust, leading the way for a detailed exploration of how to improve users' satisfaction and trust in the vendor in m-commerce.

Despite the useful findings of this study, this empirical study has several limitations that need to be acknowledged. Several factors were examined in this study. Future studies should attempt to draw profiles based on characteristics other than these factors. It must also be mentioned that the data were collected from a 200 student sample of convenience at a higher learning institution in the Federal Territory of Labuan, Malaysia. It is recognized that this convenience sample, given its demographic limitations, would place restrictions on the generalization of the results of this study to other geographic areas or to the general population. Hence, future research should expand or increase the involvement of respondents by using probability sampling techniques such as stratified random sampling. The larger the geographic area included in this type of research, the more representative the result will be.

APPENDIX 1: MEASUREMENT OF INSTRUMENTS

Interactivity
I1 I can use this mobile Internet site anywhere and anytime I need to.
I2 This mobile Internet site enables me to order products or services anywhere and anytime.
I3 This mobile Internet site offers timely and location-specific packets of information (e.g. restaurant coupons for lunch) to me.

Customization
C1 I feel that personal needs have been met when using 3G services or making 3G transactions.
C2 3G service provides me with information and products according to my preferences.
C3 I feel that 3G services providers have the same norms and values as I have.

Usefulness
U1 3G service enables me to have the access to useful service.
U2 3G service enables me to use 3G service effectively.

Ease-of-Use
E1 Learning to use 3G service is easy for me.
E2 It is easy for me to become skilful at using 3G service.
E3 Overall, I believe that 3G service is easy to operate.

Responsiveness
R1 It is easy to get in contact with 3G service providers.
R2 3G service providers are interesting in feedback.
R3 3G service providers quickly reply to requests.

Brand Image
BI1 I feel that company A branded product fulfils its practical function.
BI2 I feel that company A branded product possesses a positive symbolic meaning.
BI3 I feel that company A branded product is associated with pleasant experiences.

Satisfaction
S1 The web site provided in 3G service is successful.
S2 The web site provided in 3G service has met my expectations.

Trust
T1 Based on my experience with 3G service, I know it cares about customers.
T2 Based on my experience with 3G service, I know it is predictable.
T3 Based on my experience with 3G service, I know it knows its market.

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Int. Journal of Business Science and Applied Management, Volume 6, Issue 2, 2011

Consumer characteristics and their effect on accepting online shopping, in the context of different product types

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Abstract

Online shopping is among the most popular activities of the internet, yet the reasons why consumers buy online are still unclear. Although it is implied that consumer acceptance of online shopping is affected by different products not many studies have adopted this view. This study attempts to examine consumers' attitude when making online purchases in the context of different product types. A theoretical framework is proposed based on the determinants of consumer behaviour and user acceptance of online shopping, as well as online product classification. The factors that were selected to be tested are Personal Innovativeness of Information Technology (PIIT), Self-efficacy, Perceived security, Privacy, Product involvement and how they affect consumer attitude towards online shopping. Correlation analysis, at first, to determine the relationships among the variables and regression analysis afterwards to verify the extent of the variable interaction were used to test the hypotheses. Based on the aforementioned analyses, results were drawn and compared to the results found by Lian and Lin (2008) in a similar study. It has been found that PIIT, perceived security and product involvement have an effect on the attitude towards online shopping, yet the results vary among the different product types.

Keywords: personal innovativeness of information technology (PIIT), self – efficacy, perceived security, privacy concerns, product involvement

1 INTRODUCTION

The development of the internet has increased the number of online shopping activities (Hill and Beatty, 2011). The internet has been adopted as an important shopping medium with an increasing amount of online sales every year (Kim and Forsythe, 2010). Still, many internet users avoid purchasing online due to privacy and security concerns (Lian and Lin, 2008) deriving by their hesitation to send personal information through the internet (Roca, García and de la Vega, 2009). In spite of this, online shopping is continuing to grow as online enterprises become more sophisticated (Lian and Lin, 2008), which results in the dramatic change of how consumers buy products and services (Hill and Beatty, 2011). Wu (2003) mentions that approximately half the internet users have bought a product or service through the internet and according to Li and Zhang (2002) online shopping is the third most popular internet activity. The most recent global report shows that global online retail sales grew by 14.5% in 2009 to reach $348.6 billion, which yet only accounts for 2.5% of the total global retail sales. By 2014 global online retail sales are expected to reach $778.6 billion, increasing at a 22.2% (IMAP retail report).

The USA, online retail sales of 2009 increased by 2.1% over 2008, reaching a total of $145 billion dollars, and from 2002 to 2009 retail e-sales increased on average annual growth rate of 18.1% (U.S. Census Bureau, 2011). In the European Union of the 27 members, 37% of the internet users have made an online purchase in 2009, a 5% increase over the previous year. In the United Kingdom, Denmark, the Netherlands, Norway and Sweden more than 60% of the internet users have made an online purchase, whereas the equivalent number in Greece, Lithuania, Bulgaria and Romania is less than 10% (Eurostat, 2009). As it can be inferred from the above, the magnitude of online shopping adoption varies between the developed and developing countries (Çelik, 2011). Understanding the opportunities this new market has to offer is crucial for any business that wants to participate in it and be competitive. Moreover, online consumer attitude is an issue that concerns many researchers (Cheung *et al*, 2003; Wu, 2003; Liao and Shi, 2009; Darley, Blankson and Luethge, 2010). An essential question in this area is, which are the factors that determine consumers' decision to make a purchase from a certain electronic shop (Lowengart and Tractinskky, 2001). Finding the characteristics of possible buyers can help enterprises to accurately find potential target markets.

Furthermore, Peterson, Balasubramanian and Bronnenberg (1997) support the view that due to the special features of the internet its suitability to market products and services depends on the features of the products and services being marketed. Also, Liang and Huang (1998) showed that different products types affect consumers' acceptance of online shopping. Cho *et al.* (2003) supported that the purchasing behaviour of customers in online markets depends on what product or service they have in mind. Moreover, Korgaonkar, Silverblatt and Girard (2006) and Hassanein and Head (2006) found that the type of the product which is being sold online is responsible for the variations of customers' buying online performance. Additionally, Girard, Korgaonkar and Silverblatt (2003) in their study found that the variations that had been observed in shopping orientation and demographics were based on the type of product purchased on the internet. Although many studies have shown that consumer characteristics are important when it comes to online shopping, the majority of those ignore the effect of different product types. Wanting to overcome this limitation, the purpose of the present study is to examine how different product types affect consumer attitude.

In the first section a review of the literature is made, involving determinants of consumer characteristics, factors that determine the consumer acceptance of online shopping, product classifications and previous studies. Then, the research model and hypotheses are presented followed by the methodology that was used to conduct the research. The empirical analysis, which includes the results of the research and discussions, is presented afterwards based on the results.

2 THEORETICAL BACKGROUND

The internet is developing rapidly and while its popularity is growing, more and more users become familiar with it and adopt it as a medium to search for information and shop online (Farag *et al*., 2007; Pan, Chaipoopirutana and Combs, 2010; Hill and Beatty, 2011). This section summarises the determinants that construct the consumer behaviour, the factors that determine the user acceptance of online shopping and a brief review of previously conducted researches concerning the aforementioned.

Determinants of consumer behaviour

Consumer behaviour is affected by four categories of factors: cultural factors, social factors, personal factors and psychological factors.

The first category of cultural factors, includes terms such as culture, subculture and social class (Armstrong and Kotler, 2003; Peter and Donnelly, 2001, Wu, 2003). The term culture is complex and involves the knowledge, beliefs, arts, laws, ethics, customs and many other abilities and habits that are obtained by an individual just by being part of the society (Hawkins, Best and Coney, 1995). Every culture consists of smaller

sub-cultures which contain a more specific identity to their members. There are four categories of sub-cultures: nationalities, religion groups, tribes and geographical locations (Kotler, 1991; Armstrong and Kotler, 2003). Social classes are relatively homogenous and continuous subdivisions of a society, which are arranged hierarchically and whose members have common values, interests and behaviour (Kotler, 1991).

The second category refers to social factors and includes reference groups, family, social roles and social status (Armstrong and Kotler, 2003; Wu, 2003). Reference groups involve all those groups that have a direct (personal) or indirect influence on the attitude or behaviour of an individual (Kotler, 1991; Armstrong and Kotler, 2003). Family is considered the most significant social factor and has been widely examined (Armstrong and Kotler, 2003). There are two types of families the orientation family which consists of the parents and the family that someone creates for oneself (Kotler, 1991). The position of an individual in a group can be defined in terms of social role and social status (Armstrong and Kotler, 2003). The term role contains the actions that a person has to take in relation to the people that surround him / her. Every role is connected to a status which shows the corresponding respect of the society (Kotler, 1991).

The third category, the personal factors, include: age and life circle stage, occupation, economic situation, lifestyle, personality and self-concept (Armstrong and Kotler, 2003; Wu, 2003). People change their preferences in products or services according to their age. Moreover, their purchases are formed throughout their life circle stages which are the phases the families go through while they develop and mature over time (Kotler and Armstrong, 1996). A person's occupation is another factor that influences one's buying behaviour. People of different occupations have different needs and thus purchase different products and services (Kotler, 1991; Kotler and Armstrong, 1996; Armstrong and Kotler, 2003). Many purchasing habits depend on the economic situation of an individual (Adcock *et al*, 1995). The economic data of an individual involve one's income, savings, disposable capital, borrowing capability and attitude towards consumption regarding savings (Kotler, 1991; Armstrong and Kotler, 2003). Lifestyle is considered to be all the habits one has which are expressed through one's actions, interests, beliefs and small luxuries one indulges oneself with (Adcock *et al*, 1995). Personality regards the psychological characteristics of a person that drive him to reasonable and stable reactions towards one's environment. Last, the presumed image a person has of oneself is complex. It consists of the way a person perceives oneself, the way one wants to be and the way others consider him / her. According to the overall image someone has of oneself, he / she forms his / her behaviour (Kotler, 1991; Kotler and Armstrong, 1996; Armstrong and Kotler, 2003).

The fourth category consists of psychological factors like motivation, perception, learning, beliefs and attitudes (Armstrong and Kotler, 2003; Wu, 2003; Saprikis, Chouliara and Vlachopoulou, 2010). Motivation is an internal and complex process which influences people's behaviour and is caused by particular motives such as hunger, thirst, recognition and devotion. Consumers act and react based on their perceptions. The way a motivated person acts is influenced by his / her perception of the given situation. The largest part of human behaviour is learnt. It is said that a person's learning is produced through the interaction of motives, stimuli and reactions (Kotler, 1991; Kotler and Armstrong, 1996; Armstrong and Kotler, 2003). Through acting and learning people form beliefs and attitudes that affect their purchasing behaviour. Beliefs are the descriptive way a person thinks of something and are based on knowledge, opinion or faith and may involve sentimental charges, while attitude regards the continuous evaluation, the emotions and the tendencies of a person towards an object or idea (Kotler, 1991; Kotler and Armstrong, 1996; Armstrong and Kotler, 2003).

Factors which determine user acceptance of online shopping

Previous studies have defined four main factors of user acceptance of online shopping: consumer characteristics, personal perceived values, website design and product. They are presented in Table 1.

Consumer characteristics involve personality traits like the knowledge of the internet and the social environment (Li and Zhang, 2002), self-efficacy which refers to one's belief of his /her ability and means to successfully complete a certain action (Perea y Monsuwé, Dellaert and de Ruyter, 2004), demographic profile which contains variables like age, gender, education and income (Dholakia and Uusitalo, 2002), and last acceptance of new IT applications which refers to the user's attitude towards the adoption of IT (Al-Gahtani and King, 1999).

Table 1: Factors which determine user acceptance of online shopping

Factor	Variables	References
Consumer characteristics	personality traits	Li and Zhang, 2002; O'Cass and Fenech, 2003; Hand *et al.*, 2009; San Martín Gutiérrez, Camarero Izquierdo and San José Cabezudo, 2010
	self–efficacy	Bandura, 1997; Eastin, 2002; Li and Zhang, 2002; Perea y Monsuwé, Dellaert and de Ruyter, 2004; Lu and Hsiao 2007; Hand *et al.*, 2009; Hernández, Jiménez and Martín, 2009; Chen *et al.*, 2010; Hernández, Jiménez and Martín, 2010; Hill and Beatty, 2011; Hernández, Jiménez and Martín, 2011
	demographic profiles	Koufaris, 2002; Park and Jun, 2003; Dholakia and Uusitalo, 2002; Perea y Monsuwé, Dellaert and de Ruyter, 2004; San Martín Gutiérrez, Camarero Izquierdo and San José Cabezudo, 2010; Hernández, Jiménez and Martín, 2011
	acceptance of new IT applications	Citrin *et al*., 2000; Childers *et al*., 2001; O'Cass and Fenech, 2003; Bhattacherjee, Perols, & Sanford, 2008; Kettinger, Park and Smith, 2009; Hernández, Jiménez and Martín, 2009; Roca, García and de la Vega, 2009; Close and Kukar – Kinney, 2010; Chen *et al.*, 2010; Hernández, Jiménez and Martín, 2010; San Martín Gutiérrez, Camarero Izquierdo and San José Cabezudo, 2010
Personal perceived values	perceived danger	Senecal 2000; Ratchford, Talukdar and Lee, 2001; Han, Ocker and Fjermestad, 2001; Li and Zhang, 2002; Gupta, Su and Walter, 2004; Pedersen and Nysveen, 2005; Mathews and Healy, 2007; Lee, Kim and Fiore, 2010; San Martín Gutiérrez, Camarero Izquierdo and San José Cabezudo, 2010; Kim and Forsythe, 2010; Kiang *et al.*, 2011
	perceived convenience	Wolfinbarger and Gilly, 2001; Eastin, 2002; Lim and Dubinsky, 2004; Wang *et al*, 2005; Hernández, Jiménez and Martín, 2009; San Martín *et al.*, 2009
	perceived web site quality	Gefen and Straub, 2000; Wolfinbarger and Gilly, 2001; O'Cass and Fenech, 2003; Poddar, Donthu and Wei, 2009; Hausman and Siekpe, 2009
	perceived benefits	Childers *et al*, 2001; Eastin, 2002; Hernández, Jiménez and Martín, 2009; San Martín *et al.*, 2009; Hernández, Jiménez and Martín, 2010
Website design	security	Swaminathan, Lepkowska-White and Rao, 1999; Liao and Cheung, 2001; Belanger, Hiller and Smith, 2002; Li and Zhang, 2002; Ranganathan and Grandon, 2002; Park and Kim, 2003; Kelly and Erickson, 2004; Mummalaneni, 2005; Flavián and Guinalíu, 2006; Chang and Chen, 2009; Ha and Stoel, 2009; Roca, García and de la Vega, 2009; Zorotheos and Kafeza, 2009; Pan, Chaipoopirutana and Combs, 2010; Kukar-Kinney and Close, 2010
	privacy	Swaminathan, Lepkowska-White and Rao, 1999; Belanger, Hiller and Smith 2002; Ranganathan and Grandon, 2002; Galanxhi-Janaqi and Fui-Hoon Nah, 2004; Flavián and Guinalíu, 2006; Dolnicar and Jordaan, 2006; Chang and Chen, 2009; Ha and Stoel, 2009; Roca, García and de la Vega, 2009; Zorotheos and Kafeza, 2009; Kukar-Kinney and Close, 2010; Lee, Eze and Ndubisi, 2011
Product		Peterson, Balasubramanian and Bronnenberg, 1997; Bhatnager, Misra and Rao, 2000; Liao and Cheung, 2001; Perea y Monsuwé, Dellaert and de Ruyter, 2004; Lian and Lin, 2008; Ha and Lennon, 2010; Cheema and Papatla, 2010; San Martín Gutiérrez, Camarero Izquierdo and San José Cabezudo, 2010; Kiang *et al.*, 2011

Personal perceived values include perceived danger which refers to the uncertainty and the unpleasant outcomes of purchasing a product or service (Pedersen and Nysveen, 2005; Mathews and Healy, 2007), perceived convenience involves the time and effort savings and the twenty-four-hour accessibility of an online shop (Lim and Dubinsky, 2004; Wang *et al*, 2005), perceived website quality contains values like the design, reliability and the services provided by the site (Wolfinbarger and Gilly, 2001), and perceived benefits involve the variety of products, the price savings and the speed of purchases (Childers *et al*, 2001). The third factor, website design, includes security which refers to the customers' fear that their online transactions are not secure (Chou, 2007) and privacy which refers to the ability of the consumers to control the way their personal information are gathered and used (Galanxhi-Janaqi and Fui-Hoon Nah, 2004; Flavián and Guinalíu, 2006). Last, the product is defined as every good and service that is offered for purchasing. A consumer believes that every product is a combination of uses that will offer him / her satisfaction (Lim and Dubinsky, 2004).

Online product classifications

There are several different product classifications. Lowengart and Tractinsky (2001) classified products into high risk and low risk. Verhagen, Boter and Adelaar (2010) thought that products should be categorised into goods and services and also into hedonic and utilitarian. There is a broad range of products and services marketed online (Kiang *et al.*, 2011), yet none of the above classifications refers to marketing products through the internet. Peterson, Balasubramanian and Bronnenberg (1997) insisted that a different categorisation was needed, one that would focus on online products. Based on the special characteristics of the internet, they proposed a classification for online products which consists of three dimensions: cost and frequency of purchasing, value proposition and degree of differentiation (Table 2).

Table 2: Product classification table. Adapted from Peterson, Balasubramanian and Bronnenberg (1997).

Dimension 1	**Dimension 2**	**Dimension 3**
Low cost, frequently purchased products	tangible and physical goods	High differentiation potential
		Low differentiation potential
	intangible services	High differentiation potential
		Low differentiation potential
High cost, rarely purchased products	tangible and physical goods	High differentiation potential
		Low differentiation potential
	intangible services	High differentiation potential
		Low differentiation potential

The first dimension ranges from low cost, frequently purchased goods to high cost, rarely purchased goods. The second dimension involves from tangible and physical goods to intangible services. The third dimension refers to the product degree of differentiation, which allows companies to gain a competitive advantage (Peterson, Balasubramanian and Bronnenberg, 1997). The studies of Girard, Silverblatt and Korgaonkar (2002) and Korgaonkar, Silverblatt and Becerra (2004) of online shopping suggest that the product classification model based on search, experience, and credence products could provide a useful approach to investigate how goods may influence shopping online. Search products are those whose qualities a consumer can determine without any inspection prior to purchase. Experience products, on the other hand, require actual experience prior to purchase in order to ascertain their quality. Credence products are those that are difficult to evaluate before or even after their consumption (Korgaonkar, Silverblatt and Girard, 2006). Degeratu, Rangaswamy and Wu (2000) classified the products on the web as sensory and non-sensory. Sensory products were defined as those that have attributes that can be conveyed through our senses, particularly touch, smell, or sound, while non-sensory products were defined as products with attributes that can be conveyed reasonably well in words (Cho *et al.*, 2003). Last, de Figueiredo (2000) examined whether quality is easy or difficult to judge in products on the Web. Products on the Web are unequal due to the inability to deliver actual services or adequately detail the specific nature of many products (Cho *et al.*, 2003). Therefore, a product's attributes are not evaluated equally by customers on the Web. Thus, de Figueiredo (2000) categorised the products purchased on the Web in four groups which include commodity products (e.g. oil, paper clips), quasi-commodity products (e.g. books, CDs, videos, or toys), look-and-feel goods (e.g. suits, furniture, model homes, etc.), and look-and-feel goods with variable quality (e.g. arts, produce, etc).

Previous studies

Many studies have been conducted about online consumer behaviour. Most of them have tried to identify factors that affect or contribute to online consumer behaviour. Researchers seem to adopt different points of view and focus on different factors in different ways (Li and Zhang, 2002).

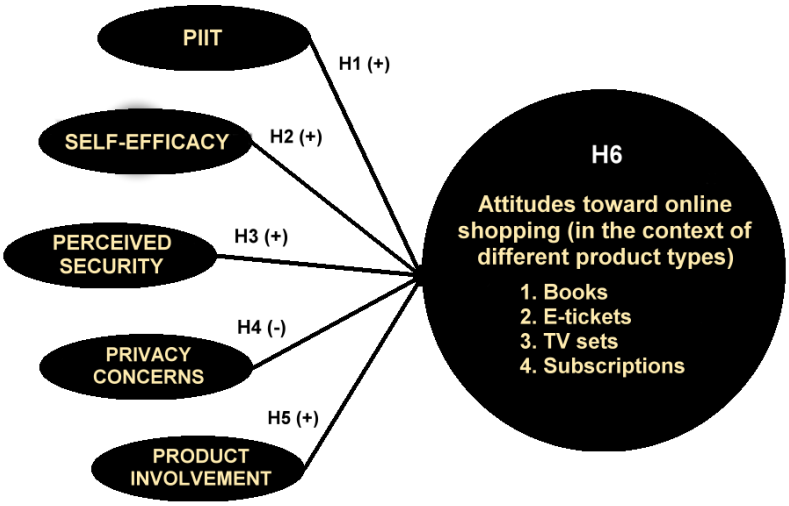
In a research carried out by Pérez-Hernández and Sánchez-Mangas (2011) it was found that having an internet connection at home increases the individual's probability to shop online up to 14%. Donthu and Garcia (1999), during their research for consumer characteristics related to online shopping, found that consumers who shop online seek convenience and variety. Moreover, they are more innovative and spontaneous than conventional buyers. Also they are less aware of the brand of the product and tend to have a more positive attitude towards advertising and direct marketing.

On the other hand, Siu and Cheng (2001) found that the most important factors in classifying online shoppers are the economic benefits that derive from online shopping, the product availability, the security dangers, their monthly income, the product technology opinion leaders and their attitude towards technological development. Ho and Wu (1999) and Li and Zhang (2002) discovered that there are positive relationships between online shopping behaviour and five categories of factors that include e-stores' logistical support, product characteristics, websites' technological characteristics, information characteristics and homepage presentation. Vellido, Lisboa and Meehan (2000) found nine factors that relate to consumers' opinions on online shopping. Among these factors, consumer risk perception was the one that defined users who had realised an online purchase and those who had not.Jarvenpaa, Tractinsky and Vitale (2000) examined a model of consumer behaviour towards specific online shops, in which perceptions about reputation and size affect consumer trust of the retailer. The level of trust had a positive relationship to the attitude towards the shop and a negative relationship towards perceived risk. Finally, attitude and risk perception affected consumer intention to buy from a specific store (Jarvenpaa and Tractinsky, 1999; Lowengart and Tractinskky, 2001). Chiu, Lin and Tang (2005), incorporated two additional variables in TAM with the view to enhance its ability to explain the consumers' attitudes towards online shopping. The new model suggested perceived usefulness, perceived ease of use, personal awareness of security and personal innovativeness influence both online purchase intention and attitude towards online shopping. Moreover, Lee, Fiore and Kim (2006) found perceived usefulness, perceived ease of use, and perceived enjoyment to be very important in predicting a consumer's intention to shop from a particular online retailer. Regarding perceived ease of use, Hernández, Jiménez and Martín, (2010) have found it to have a weak effect on potential online customers and it was rejected when examining experienced online shoppers. Pan, Chaipoopirutana and Combs (2010) builded a model which includes individual perceptions, subjective norms, incentive programmes, personal characteristics and demographics in order to explain the customers' online purchase intention. Their results verified their model, with perceived usefulness being the most important factor. Contrary to the aforementioned research, Hernández, Jiménez and Martín (2011) in their study found that the socioeconomic characteristics of the individual (age, gender and income) do not have any significance in explaining the behaviour of experienced e-shoppers. Furthermore, San Martín *et al.* (2009) conducted a comparative research between Spain and Japan and found that there are no significant differences regarding the frequency of online purchasing in both countries; however perceived risk was found to be higher in Spain due to the users being less experienced in e – commerce technologies. Another comparative study was conducted by Constantinides, Lorenzo-Romero and Gómez (2010) about the factors that affect the users' online buying behaviour and the actual factors which affect their behaviour in Spain and the Netherlands. Their results indicate that usability and marketing mix have a significant effect on the individual's online purchasing preferences. Additionally, the interactivity factor appears to have an insignificant effect upon the selection of the online vendor. Although many studies have shown that consumer characteristics are important when it comes to online shopping, the majority of those ignore the effect of different product types. Wanting to overcome this limitation, the purpose of the present study is to examine how different product types affect consumer attitude in the context of online shopping.

Research model and hypotheses

Based on the above discussion and the study of the research model implemented by Lian and Lin (2008), it was decided that it could help examine how different product types affect consumer attitude towards online shopping in Greece. Lian and Lin (2008) proposed an integrated model which involves the four most common factors that define user acceptance of online shopping (see 2.2.) and that is the main reason for the selection of this model. From these factors derived the five variables that were included in the research model (figure 1). The critical consumer characteristic variables include personal innovativeness of information technology (PIIT), Internet self-efficacy, perceived Web security, privacy concerns and product involvement.

Figure 1: Research model



Personal innovativeness of information technology (PIIT)

Personal innovativeness was defined as the degree that one adopts new ideas faster than the other members of a system (Rogers, 1995; Ha and Stoel, 2004). Based on this definition Agarwal and Prasad (1998) applied the term of personal innovativeness in the domain of information technology, named it PIIT and defined it as the willingness of a user to experiment on new information technologies. Hwang (2009) stated that online shopping is an innovative behaviour that is more likely to be adopted by innovators. Kim and Forsythe, (2010) supported that one is more likely to adopt an innovation they are comfortable with. Online shopping is a new technology for Greek consumers because e-commerce is less mature in Greece than it is in other industrialised countries such as the USA. Consumer behaviour towards online shopping is significantly affected by PIIT and so users with high levels of PIIT are more likely to accept online purchasing. The following hypothesis derives from the aforementioned:

H1: High levels of PIIT have a positive effect on consumer attitude towards online shopping.

Self-efficacy

Internet self-efficacy derives from the social cognitive theory proposed by Bandura (1997). Within this perspective, one's behaviour is constantly under reciprocal influence from cognitive (and other personal factors such as motivation) and environmental influences. Bandura calls this three-way interaction of behaviour, cognitive factors, and environmental situations the "triadic reciprocality" (Bandura, 1989). Eastin (2002) and O'Cass and Fenech (2003), Perea y Monsuwé, Dellaert and de Ruyter, (2004), Wei and Zhang (2008) and Hernández, Jiménez and Martín, (2011) applied that term in the context of internet; they named it internet self-efficacy and defined it as the belief in one's abilities to use the internet effectively. In other words, self-efficacy in online shopping describes the individual's ability to apply their skills to complete a purchase on the internet (Hernández, Jiménez and Martín, 2009). Moreover, Eastin (2002) and O'Cass and Fenech (2003) showed that personal internet self-efficacy has a positive effect on user acceptance of online shopping. According to Perea y Monsuwé, Dellaert and de Ruyter (2004) consumers who have low self-efficacy levels are insecure and feel uncomfortable making purchases over the internet. Thus, the following hypothesis is inferred:

H2: High level of internet self-efficacy positively influences consumer attitude towards online shopping.

Perceived security

Perceived security was defined as a threat that creates an event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosures, modification of data, denial of service, and/or fraud, waste and abuse (Roca, García and de la Vega, 2009). Another definition states that perceived security is the consumer's belief that his financial data is not visible, will not be stored or used by non-authorised users (Flavián and Guinalíu, 2006). Security of online transactions is still the main issue of e-

commerce (Elliot and Fowell, 2000; Szymanski and Hise, 2000; Liao and Cheung, 2001; Park and Kim, 2003). According to Kesh, Ramanujan and Nerur (2002) and Chang and Chen (2009), security is one of the most important factors in the success of e-commerce. Liao and Cheung (2001) found that security concerns affect consumer behaviour. Moreover, security is the factor that often prevents users from shopping online (Li and Zhang, 2002; Zorotheos and Kafeza, 2009). Furthermore, O'Cass and Fenech (2003) consider that the adoption of online shopping is seriously affected by the user perception of security. From the above derives the following hypothesis:

H3: High levels of perceived online security positively affect the consumer attitude towards online shopping.

Privacy concerns

The term privacy is generally used to describe the state of being free from intrusion or disturbance in one's private life or affairs which includes a group of values like people's right to privacy of their own body, private space, privacy of communications and information privacy (Collier, 1995). For the cyberspace it is defined as the user's ability to control the terms by which his personal information is collected and used (Flavián and Guinalíu, 2006; Lee, Eze and Ndubisi, 2011). Perceived privacy in online shopping is the possibility that online companies collect data about individuals and use them inappropriately (Roca, García and de la Vega, 2009).

Personal information privacy is among the most significant inhibitory factors on the internet (Cho, Rivera–Sánchez and Lim, 2009; Zorotheos and Kafeza, 2009; Roca, García and de la Vega, 2009). Dolnicar and Jordaan's (2006) results show that privacy is a crucial issue for consumers and Pan and Zinkhan (2006) found that privacy issues affect consumers' trust towards the online retailer. In some studies it is found that privacy concern is the main obstacle to the expansion of online shopping (Chang and Chen, 2009; Lee, Eze and Ndubisi, 2011). According to Sheehan and Hoy (1999) as privacy concerns rise, consumers are not willing to provide personal information. Thus the following hypothesis is derived:

H4: High privacy concern levels have a negative effect on consumer attitude towards online shopping.

Product involvement

Product involvement represents a concern with a product that the consumer brings into a purchase decision (Pedersen and Nysveen, 2005). Consumer involvement with a product reflects its relevance (Zaichkowsky, 1985), influences consumer motivation to make a purchase decision (Peter and Olson, 1996) and has an impact on his shopping experience and behaviour (Koufaris, 2002).

Product involvement is an enduring type of involvement and levels of involvement with the same product vary greatly across people. Therefore, consumers with high product involvement experience constant high involvement with a particular product category (Ha and Lennon, 2010). In this study it is expected that high product involvement levels positively influence consumer behaviour towards shopping online and thus, the following hypothesis is stated:

H5: High product involvement levels positively affect consumer attitude towards online shopping.

Product categories

Many researchers (Bhatnager, Misra and Rao 2000; Peterson, Balasubramanian, and Bronnenberg 1997; Liao and Cheung, 2001; Lian and Lin, 2008) have insisted on the importance of different product types when being marketed online. Most of the previous studies have focused their attention on one product or one category of similar products. For example Liang and Lai (2002) studied the online book purchase, Dahlen and Lange (2002) examined the retail purchase of grocery products and Ruyter, Wetzels and Kleijnen (2001) focused on travelling services. This type of researches restricted the generalisation of the results to few products at best. Although Eastin (2002) used four common business-to-consumer activities (e-commerce, e-banking, e-investments and e-payments) in order to understand the critical factors regarding consumer acceptance, these four categories of products are similar. Thus, the role product category was expected to hold in the acceptance of online shopping was eliminated. In this study, by employing different unrelated product types, an attempt is made to examine their influence between consumer characteristics and consumer attitude towards online shopping and from the aforementioned the following hypothesis is derived:

H6: Product categories affect the relationships between consumer characteristics and attitudes toward online shopping.

3 METHODOLOGY

Sample selection

The sample of this study consists of Greek internet users, who know how to make an online purchase, possibly have made one or are willing to make one in the future. In the following table (Table 3) the characteristics of the participants are presented. 51.5% of the sample has more than 5 years' experience on the internet and 34.8% of the sample uses the internet for more than 14 hours weekly. Moreover, 46.6% were male and 53.4% were female. The age of the majority of the sample (83.3%) is between 18 and 44 years old.

Table 3: User characteristics

	Data	Frequency	Percentage %
Gender	Male	95	46.6
	Female	109	53.4
Age	< 18	16	7.8
	18 – 24	69	33.8
	25 – 34	75	36.8
	35 – 44	26	12.7
	45 – 54	15	7.4
	55 – 64	3	1.5
Education	High-school	71	34.8
	Technological	43	21.1
	University	73	35.8
	Post-graduate	17	8.3
Internet experience	< 6 months	17	8.3
	6 – 12 months	8	3.9
	1 – 2 years	24	11.8
	2 – 4 years	50	24.5
	> 5 years	105	51.5
Weekly use of the internet	< 7 hours	86	42.2
	7 – 14 hours	47	23.0
	14 – 21 hours	32	15.7
	> 21 hours	39	19.1
Online purchases	Yes	126	61.8
	No	78	38.2
Online purchases during the last year	0 purchases	86	42.2
	1 – 2 purchases	45	22.1
	2 – 4 purchases	25	12.3
	> 5 purchases	48	23.4
Amounts spent online (last year)	0 – 100 €	113	55.4
	100 – 300 €	36	17.6
	300 – 500 €	15	7.4
	500 – 700 €	12	5.9
	> 700 €	28	13.7

This study will try to resolve the relationships between consumer characteristics and their attitude towards online shopping, in the context of different product types. A total of 232 internet users were selected to complete a questionnaire.

Measurement development

The collection of the necessary data was done with the use of a questionnaire. The questionnaire consists of three parts: the introduction where the purpose of the research is stated, the personal information section which includes questions about age, education, internet experience and online shopping experience and the third and main part where the questions for measuring the variables are. All 37 questions of the third part of the questionnaire were adopted from various researchers (Table 4).

Table 4: Research variables

	Sources	**Questions**
PIIT	Agarwal and Prasad (1998)	4
Self - efficacy	O'Cass and Fenech (2003)	4
Perceived security	O'Cass and Fenech (2003)	3
Privacy	Smith, Milberg and Burke (1996)	15
Product involvement	Zaichkowsky (1994)	6
Attitude towards online shopping	Taylor and Todd (1995), adapted by Lian and Lin (2008)	5

The research was carried out in Greece due to rapidly developing in the context of online shopping (Favier and Bouquet,2009), especially in East Macedonia and Thrace, which is one of the largest geographical departments in Greece, in August 2008, and all the questions were translated into Greek. Then a pilot testing was conducted to avoid any miscomprehensions by the Greek users. All questions were measured in a five point Likert scale. From the distributed questionnaires 28 were unsuitable and thus, excluded. A total of 204 questionnaires were entered in the S.P.S.S. (*Statistical Package for Social Sciences*) statistical programme.

Online product selection

Due to the special characteristics of the internet, in this study the classification proposed by Peterson, Balasubramanian and Bronnenberg (1997) is used. Although many other studies have been conducted using different online products' classification (Degeratu, Rangaswamy and Wu, 2000; de Figueiredo, 2000; Girard, Silverblatt and Korgaonkar, 2002; Korgaonkar, Silverblatt and Becerra, 2004), this model is thought to be more suitable for the market it is being used for. This model consists of three dimensions: the cost and frequency of purchase, the value proposition and the degree of differentiation.

In this study the last dimension is omitted because the Greek market is not mature enough with regard to online shopping and it is even less mature in the high-low differentiation products since the amount spend for online purchases in 2008 accounted for only 0.15% of the total online sales in Europe. Yet the increase of online purchases in 2008 was 54.7% over the previous year (Favier and Bouquet, 2009), which indicates that the Greek market is rapidly developing. It is considered sensible not to employ the third dimension in the study since online shopping is still in a developing stage in Greece.

As a result the four products selected are based on the two dimension classification. Books are used for tangible, low cost, frequently purchased products, e-tickets are used for intangible low cost, frequently purchased products, TV set are used for tangible, high cost, rarely purchased products and subscriptions are used for intangible high cost, rarely purchased products (Table 5).

Table 5: Products employed in this research

	Low cost, frequently purchased products	**High cost, rarely purchased products**
Tangible products	Books	TV sets
Intangible products	E-tickets	Subscriptions

Instrument validity

Before examining the hypotheses it is essential to examine the validity of the questionnaire that was used for measuring the six factors of the research model. Validity is the degree in which variables measure accurately what they are supposed to measure (Hair *et al.*, 1998) and consists of content validity and construct validity.

The purpose of the instrument content validity is to eliminate or to correct those questions that have not accomplished their research goal (Bock and Kim, 2002). Although, the content validity is confirmed from a previous study (Lian and Lin, 2008), before the beginning of the present research a discussion with academic staff and a pilot testing was made to avoid any miscomprehensions.

Construct validity was accomplished by using exploratory factor analysis and reliability analysis based on the Cronbach Alpha statistical metre. The results of these two analyses are presented in the following section.

4 EMPIRICAL ANALYSIS

Exploratory factor analysis

The exploratory factor analysis shows the number of factors that were empirically created and how the 37 questions employed in this study were distributed in those six factors. For that cause Principal component analysis and Varimax rotation were used.

The results of this analysis (Table 4) show that the use of exploratory analysis was justified. Kaiser-Meyer-Olkin (KMO) statistics range from 0.687 to 0.895 and Bartlett's Test of Sphericity is significant at 0.00 level. The analysis showed all items, except for six, had loadings greater than 0.45, which are acceptable considering the sample size (Hair *et al.*, 1998). The six items that were unacceptable were eliminated.

Reliability analysis

Reliability is one of the most important criteria for evaluating research instruments and refers to the internal consistency of the factors (Chu & Murrmann, 2006). Cronbach's alpha (*a*) is employed to test instrument reliability. According to Nunnally (1978) any value above 0.7 indicates reliability. The results show that all factors range between 0.811 and 0.915, which surpasses the criteria of reliability (Table 6).

Table 6: Factor and reliability analysis results

Factor		Item	Variable loading	KMO Bartlett's Test Sig.	Cronbach's alpha
PIIT		PIIT1	0.845	0.791 p=.000	0.839
		PIIT2	0.875		
		PIIT3	0.761		
		PIIT4	0.740		
Self-efficacy		SE1	0.843	0.836 p=.000	0.874
		SE2	0.821		
		SE3	0.825		
		SE4	0.858		
Perceived security		PS1	0.628	0.687 p=.000	0.875
		PS2	0.686		
		PS3	0.788		
Privacy Concerns		P1	Eliminated	0.867 p=.000	0.811
		P2	Eliminated		
		P3	0.873		
		P4	0.850		
		P5	0.907		
		P6	Eliminated		
		P7	0.876		
		P8	Eliminated		
		P9	0.836		
		P10	Eliminated		
		P11	0.890		
		P12	Eliminated		
		P13	0.891		
		P14	0.849		
		P15	0.842		
Product involvement	Books	PI1.1	0.904	0.895 p=.000	0.915
		PI1.2	0.884		
		PI1.3	0.916		
		PI1.4	0.963		
		PI1.5	0.867		
		PI1.6	0.872		
	E-tickets	PI2.1	0.891	0.865 p=.000	0.886
		PI2.2	0.851		
		PI2.3	0.867		
		PI2.4	0.925		
		PI2.5	0.849		
		PI2.6	0.837		

	TV sets	PI3.1	0.913	0.867 p=.000	0.890
		PI3.2	0.870		
		PI3.3	0.854		
		PI3.4	0.907		
		PI3.5	0.822		
		PI3.6	0.849		
	Subscriptions	PI4.1	0.911	0.892 p=.000	0.903
		PI4.2	0.899		
		PI4.3	0.907		
		PI4.4	0.909		
		PI4.5	0.856		
		PI4.6	0.878		
Attitude towards online shopping	Books	A1.1	0.774	0.815 p=.000	0.898
		A1.2	0.763		
		A1.3	0.904		
		A1.4	0.815		
		A1.5	0.841		
	E-tickets	A2.1	0.809	0.810 p=.000	0.884
		A2.2	0.767		
		A2.3	0.871		
		A2.4	0.807		
		A2.5	0.803		
	TV sets	A3.1	0.856	0.850 p=.000	0.899
		A3.2	0.866		
		A3.3	0.844		
		A3.4	0.845		
		A3.5	0.843		
	Subscriptions	A4.1	0.809	0.832 p=.000	0.884
		A4.2	0.823		
		A4.3	0.871		
		A4.4	0.822		
		A4.5	0.848		

Correlations

Correlation is a statistical method used for measuring or describing the relationship between two variables. Finding correlations among variables is essential, yet it cannot be described as a relationship between cause and effect. The information given can only be taken as an indicator (Dimitriadi, 2000). Correlations among the six factors, in the context of four product types are presented in Table 7.

Table 7: Correlations between dependent and independent variables

Items	PIIT	SE	PS	PC	PI
A (books)	0.210**	0.109*	0.101*	-0.055	0.594**
A (e-tickets)	0.028**	0.048*	0.130*	-0.059	0.658**
A (TV sets)	0.205**	0.119*	0.167*	-0.075	0.633**
A (subscriptions)	0.308**	0.147*	0.060*	-0.048	0.684**

** Correlation is significant at the 0.05 (2-tailed)*

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

From the above it is safe to say that consumers' attitude towards online shopping is affected by different product types. Moreover the factors that are considered important are different for every product type. Regarding books the factors that are significant are PIIT and product involvement while regarding e-tickets only product involvement is significant. In terms of TV sets PIIT, perceived security and product involvement are significant while in terms of subscriptions PIIT, self-efficacy and product involvement are significant. As it can

be observed, privacy concerns are insignificant regardless of the product type, while product involvement is the only factor that is significant in every product category.

Regression analysis

As mentioned before, correlation analysis cannot be described as a relationship between cause and effect (Dimitriade, 2000). To overcome this limitation linear multiple regression was employed to describe the association among the factors and to form a mathematic model. Attitude towards online shopping in the context of different product types is the dependent variable (Y_1 : books, Y_2 : e-tickets, Y_3 : TV sets, Y_4 : subscriptions) and PIIT (X_1), self-efficacy (X_2), perceived security (X_3), privacy (X_4) and product involvement (X_5) are the independent variables. The mathematical models are displayed below.

$$Y_1 = b_{0.1} + b_{1.1}*X_1 + b_{2.1}*X_2 + b_{3.1}*X_3 + b_{4.1}*X_4 + b_{5.1}*X_5$$
$$Y_2 = b_{0.2} + b_{1.2}*X_1 + b_{2.2}*X_2 + b_{3.2}*X_3 + b_{4.2}*X_4 + b_{5.2}*X_5$$
$$Y_3 = b_{0.3} + b_{1.3}*X_1 + b_{2.3}*X_2 + b_{3.3}*X_3 + b_{4.3}*X_4 + b_{5.3}*X_5$$
$$Y_4 = b_{0.4} + b_{1.4}*X_1 + b_{2.4}*X_2 + b_{3.4}*X_3 + b_{4.4}*X_4 + b_{5.4}*X_5$$

Regression results are shown in tables 8 and 9. In table 8 computed F-values and R^2 are displayed to understand the overall significance of each equation. All of the models yield significant p-values ($p < .01$) and R^2 above 40% of the variance in attitudes toward online shopping was explained.

Table 8: Summary of regression analysis

	Books	**E-tickets**	**TV sets**	**Subscriptions**
F-value	27.831	30.878	29.900	39.102
p-value	0.000	0.000	0.000	0.000
R^2	0.413	0.438	0.430	0.497
Durbin – Watson	1.873	1.986	1.952	1.700

The results of significance testing of the study variables are listed in table 9. The regression results suggest the following: In the context of book buying, perceived security ($p = 0.043$) and product involvement ($p = 0.000$) yield coefficients with significant p-value. In the context of e-tickets purchases, only product involvement ($p = 0.000$) yield significant p-value for its coefficients. Furthermore, in the context of TV purchases, p-values are significant for PIIT ($p = 0.047$) and product involvement ($p = 0.000$). Finally, in the context of subscription purchase, two variables yield significant p-values including PIIT ($p = 0.009$) and product involvement ($p = 0.000$).

Table 9: Analysis of the four products

	Regression coefficient	Standard error of coefficient	Standardised regression coefficient	Sig.
Books				
Constant	$-7253*10^{-17}$	0.054		
PIIT	0.211	0.060	0.211	0.000
Self-efficacy	-0.058	0.060	-0.058	0.338
Perceived security	0.117	0.580	0.117	0.043
Privacy	0.004	0.570	0.004	0.941
Product involvement	0.611	0.550	0.611	0.000
E-tickets				
Constant	$-4196*10^{-17}$	0.053		
PIIT	0.013	0.058	0.013	0.822
Self-efficacy	0.000	0.059	0.000	0.996
Perceived security	0.062	0.056	0.062	0.270
Privacy concerns	-0.026	0.056	-0.026	0.636
Product involvement	0.651	0.054	0.651	0.000
Tv sets				
Constant	$2594*10^{-17}$	0.054		
PIIT	0.118	0.059	0.118	0.047
Self-efficacy	-0.025	0.059	-0.025	0.671
Perceived security	0.110	0.057	0.110	0.053
Privacy concerns	-0.009	0.056	-0.009	0.873
Product involvement	0.616	0.055	0.616	0.000
Subscriptions				
Constant	$-3474*10^{-17}$	0.050		
PIIT	0.149	0.056	0.149	0.009
Self-efficacy	0.033	0.056	0.033	0.550
Perceived security	0.016	0.053	0.016	0.762
Privacy concerns	-0.052	0.053	-0.052	0.329
Product involvement	0.647	0.052	0.647	0.000

5 DISCUSSION

This study developed a model for determining online shopping attitudes and tested it in the context of different product types. Results demonstrated that the four regression functions were all significant in the context of different products. The results are discussed below.

To begin with, in this study books were chosen to represent low cost, frequently purchased, tangible products. The factors that seem to positively affect consumer attitude towards buying books online are PIIT, perceived security and product involvement. This is probably due to the fact that books are inexpensive and are the first thing that someone buys when he wants to experiment with online shopping.

Low cost, frequently purchased, intangible products are represented by e-tickets. The only factor that seems to have a significant positive effect on consumer buying e-tickets online is product involvement. E-tickets are inexpensive and consumers' interest is focused solely on the purpose that it accomplishes to fulfil. That can also be said for other low cost, frequently purchased, intangible products.

For high cost, rarely purchased, tangible and intangible products, TV sets and subscriptions were adopted respectively. The factors that have a positive effect on them are the same and are PIIT and product involvement.

This is probably because of the relatively high cost that these products have and the reluctance to buy them from the internet. Users are not willing to experiment with buying high cost products online unless they consider them important.

It is obvious from the above that self-efficacy does not have any effect on consumers' attitudes towards online shopping no matter what the product is. Viewing the answers given by the sample, it is safe to say that all respondents consider themselves able to use the internet effectively (mean = 4.31). The only explanation for this is that online shopping is a relatively new technology in Greece and whether they will choose it as a purchase medium has nothing to do with their ability to use it effectively.

Moreover privacy concerns have no effect on consumer attitude towards online shopping. Consumers show a high level of concern about their privacy (mean = 4.40) yet that does not prevent them from buying online. This may be due to geographical reasons. It is possible that the local market does not have the products that consumers need so they are obliged to search for them in the universal market, ignoring their concerns.

All product categories have in common the product involvement factor and this is probably because consumers are reluctant and buy online only products that they really need and consider important.

Comparing the present study to the one carried out by Lian and Lin (2008) in Taiwan, it is observed that they have similarities but are not identical. The only factor that is shown to have the same positive effect towards online shopping is product involvement. Moreover the only product category that has the same results in both studies is the one of low cost, intangible products that is solely affected by the product involvement factor. In the rest of the results there are variations. This indicates that possible geographical reasons can explain the different online consumers' attitudes in the context of different product types.

These geographical causes are obvious, if we try to investigate the significant differences between the online markets of the two countries. In Taiwan, internet penetration reached 70% of the total population in 2011 and the total growth rate of internet usage since 2000 is 257.94% (Internet World Stats, 2011a). Additionally, it was found that despite the global economic recession, Taiwan's e-commerce annual growth increased by 20% and generated $15.4 billion in 2010 (Highbeam Research, 2011).

On the other hand, in Greece the situation is completely different. From a recent survey (Internet World Stats, 2011b) it was shown that regardless of the growing numbers in the rest of its European counterparts, Greece cannot adopt at the same rate internet and e-commerce technologies. The rate of internet usage in Greece was 46.2% in 2011 and the total growth population reached 397.1% since 2000 (Internet World Stats, 2011b). Moreover, 12% of the Greek internet users had realised their last online purchase within the last twelve months (Eurostat, 2011).

6 CONCLUSION

From all the above, it is made clear that different product types are responsible for the differentiations of the results. As a final conclusion it can be said that consumer attitude towards online shopping is affected mainly by the product in question.

Additionally, it can be said that in Greece people are still experimenting with online purchases although the annual growth rate is higher than 50% (Favier and Bouquet, 2009). In the Nielsen Global Consumer Report (2010) it is stated that 23% of the Greek online shoppers did not intent to make any purchases in the following six months, when the Europe's average was near 21%. In the same report it has been found that Greek online shoppers prefer electronic equipment and computer hardware which fall under the high cost, rarely purchased, tangible goods which can justify the unwillingness of online shoppers to purchase online short-term (Nielsen Global Consumer Report, 2010).

Overall, it is obvious that the product classification and type of products that were selected are responsible for the variations in the results in the present study. Due to the different characteristics every product has, consumers' attitude shows variations. Consumers behave differently when buying inexpensive products and differently when they are buying expensive products. Also, their attitude changes when it involves everyday products and when they buy products and services they intent to use in the long-term.

The present study provides an understanding of what drives consumers to buy their products online and can be used by companies that promote their products through the internet. However, no personal perceived values such as perceived convenience, perceived danger, perceived website quality and perceived benefits, that could alter the findings of the research, were raised.

Furthermore, the third dimension of the Peterson, Balasubramanian and Bronnenberg (1997) model, the degree of differentiation, was not employed due to the Greek online market not being mature enough. If further attempts were to be made to expand the present model and to further examine the consumers' online buying behaviour, it would be interesting if they included personal perceived values and website design characteristics, as well as involve products and services that fulfil the degree of differentiation dimension.

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Int. Journal of Business Science and Applied Management, Volume 6, Issue 2, 2011

Book Review: Handbook of Partial Least Squares: Concepts, Methods and Applications

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Book Information

Book Title: Handbook of Partial Least Squares: Concepts, Methods and Applications
Author: Esposito Vinzi, V.; Chin, W.W.; Henseler, J.; Wang, H.
Publisher: Springer
Edition: 1st edition
Year: 2010
Pages: 798 pages
ISBN: 978-3540328254
Price: £224.00

Keywords: statistics, partial least squares, marketing, structural equation modelling

BOOK REVIEW

Business and management researchers would probably agree that some applied research projects have limited participants because of the project nature. Surveying multinational CEOs, female senior executives, or physically disabled workers can be challenging because the sample size can be small and the data distribution is often skewed. These problems may cause researchers to draw incorrect inference and prevent them from carrying out structural equation modeling (SEM) where strict data assumptions are required.

Partial Least Squares (PLS) is a soft-modeling approach developed by Herman Wold in the mid 60s. Since PLS is insensitive to data non-normality, with no parameter identification problem, and has relatively small sample size requirement, it is often considered by researchers to be a good alternative to traditional covariance-based approach in SEM.

The first edition of the Handbook of Partial Least Squares was just published by Springer in February 2010, after a 3-year publication delay. This 800-page book is the second volume in the Springer Handbooks of Computational Statistics series. It is positioned to be a comprehensive reference guide that explores the concepts, methods, and applications of the PLS statistical procedure. The book is written for professors, PhD students, and research professionals who want to gain a better understanding of this emerging multivariate analysis approach. Since it assumes some knowledge of intermediate statistical knowledge, this book is not a beginner text for college students. The global research community would benefit from this handbook due to a general lack of PLS publication in the market. This book is timely as PLS has gained increasing attention of the research community in the past decade.

This handbook is edited by V. Esposito Vinzi et al. who are renowned experts in the PLS field. A whopping 33 articles are contributed by 74 authors from the global academic and research community. There are three main parts to the handbook, which one should read in sequence from the book's beginning to end.

The first part explores the PLS methodology in general. The articles are grouped into five sections to help readers understand PLS in a step-by-step manner. The first section (Chapter 1-3) consists of three articles, discussing the basic concept and model assessment of PLS. I enjoy reading Dijkstra's article the most because he reveals the history of PLS from a first hand perspective. As Wold's PhD student at the Wharton School, he brings readers back in time to view the early development of PLS vividly. Dijkstra clearly explains the "basic design" and how PLS can be used to construct proxies for the latent variables. The second section (Chapter 4-7) extends the PLS Path Modeling discussion to help readers design advanced, multi-block models. I find Chin and Dibbern's article interesting as they present a new permutation-based procedure for carrying out multi-group PLS analysis. The issue of classification is being covered in the third section (Chapter 8-10), while the fourth section (Chapter 11-14) illustrates how PLS path modeling can be used in customer satisfaction studies. Advanced PLS regression modeling is explored in the fifth section (Chapter 15-17). Readers may find the paper by Wold, Eriksson and Kettaneh useful as it explores the use of PLS in data mining and data integration.

Part two (Chapter 18 to 27) is my favourite as it shows how PLS can be applied to solve marketing problems. It covers case studies ranging from employee satisfaction, brand preference, customer loyalty, customer value, web strategy, to total quality management. I believe business and management researchers will appreciate the various examples presented in the book. PLS is presented as a good alternative to traditional AMOS or LISREL approach in conducting SEM analysis if the model is designed properly. Kristensen and Eskildsen's article "Design of PLS-Based Satisfaction Studies" is a must read for marketers who want to make use of PLS in their customer satisfaction projects.

The final part of this book (Chapter 28 to 33) is designed to be a tutorial for PLS learners. It is a collection of "how to" articles, guiding readers to properly design and build PLS models. I enjoy reading Chin's article "How to Write Up and Report PLS Analyses" as it helps readers to report their research findings in a professional manner.

While this book serves as a great resource to those who are new to PLS, researchers who have been actively using this statistical procedure and following its development since the late 90s may find it a slight disappointment. This is because the book mainly consists of extended version of existing PLS literature that has been published in the past decade. Another imperfection can be found in the tutorial section. While the articles in part three help readers to choose the right software and develop advanced model for PLS analysis, the book lacks sufficient guidelines to alert readers what "not to do" when using PLS in their research projects. As *MIS Quarterly (MISQ)* has twice pointed out in its editorial (Marcoulides & Saunders, 2006; Marcoulides, Chin & Saunders, 2009), PLS is not a magical silver

bullet for all kinds of research projects. Researchers must pay attention to its limitations and restrictions. These important messages seem to be lacking from this otherwise great handbook of PLS.

With a suggested retail price of £224.00, the Handbook of Partial Least Squares is certainly not an impulse purchase for most readers. If you are a professor or researcher who wants to gain insights into this statistical procedure to tackle problematic data set, this book is a good buy considering the enormous effort the editors have put in to bring this book to life. For those who want to take a peek of this masterpiece, you will be pleased to learn that Google Books has a copy for your preview.

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Int. Journal of Business Science and Applied Management, Volume 6, Issue 2, 2011

Book Review: Always-On Enterprise Information Systems for Business Continuance, Technologies for Reliable and Scalable Operations

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Book Information

Book Title: Always-On Enterprise Information Systems for Business Continuance, Technologies for Reliable and Scalable Operations
Author:
Publisher: Information Science Reference
Edition: 1st edition
Year: 2010
Pages: 324 pages
ISBN: 978-1-60566-723-2
Price: £153.00

Keywords: business continuance, Enterprise Information Systems (EIS), risk and disaster management, IT research and theory, IT policy and governing

BOOK REVIEW

This book doses a thorough job in identifying the business continuity (BC) in modern enterprises, and fills an acknowledged void in the field of present Information Systems (IS) management.

The Information Systems landscape has evolved significantly in the last few years; a serious challenge facing modern enterprise information systems is the expectation to be resilient and operational on an 'always-on' basis (24 hours a day, 7 days a week, 365 days a year). This is particularly important for multinational companies and e-business oriented organizations in order to stay competitive.

The book has capably achieved it aim of providing high quality chapters that describing in more details the structure of information systems pertaining to enabling technologies, aspects of their current implementation, IT governing, risk management, disaster management, interrelated manufacturing and supply chain strategies, and new IT paradigms.

The background and rationale for this book is given clearly by the editor in the preface, as well as the title and a brief description for each of the seventeen chapters, making it easy to navigate the book's organisation. Moreover, each chapter provides appropriate definitions, clear discussion, chapter-by-chapter references, as well as using endnote features in most of the chapters, giving extra information much easier

The first three chapters enlighten the concept of IT governance, risk and disaster management in term of decision-making quality. Chapters four, five six, seven, eight and nine makes a strong contribution to knowledge in the area with a comprehensive input on enterprise information system availability (Always-on). These different chapters deal with the term 'Always-on' from different angles. For example, chapter four, talks about designing and building enterprise information system; chapter seven is about challenges of data management in always-on enterprise information system, and chapter nine about some aspects of implementing always-on IT-solutions and standards in the banking system. From the reviewer point of view, this is a superior choice as the banking sector is a significant sector in any market. The following chapters keep touching upon important aspects related to enterprise information technology management in an integrated manner with previous chapters in the book.

Nijaz Bajgoric and chapter's authors in this piece of work are able to target IT management students at undergraduate and postgraduate level, as well as practitioners. Authors successfully present a comprehensive guide to all aspects of deploying enterprises information systems within businesses and demonstrate these principals in practise. The contributors also covers a wide range of applications as well as a valuable selection of real-world cases such as Microsoft, Oracle, and IBM in (Chapter six, eight). The familiarity of these cases to most readers would help provide a good understanding.

In the introduction of each chapter, the writers start with a clear justification, definitions, and the significance of the chapter goals. This helps the readers from different backgrounds and different academic levels to feel confident and excited about going further into each chapter. This is followed by a detailed outline of each subject area. This also allows the reader to engage with the topics covered, and gain useful knowledge. However, in the second part of each chapter, each author makes the most important contribution to their topics. Here they talk about the solution; this can be a proposed frameworks or models or even a result of study that can enhance in solving particular challenges or issues. For instance: chapter one proposes a corporate IT risk management framework of IT governance and IT audit. Chapter five, suggests a model that aims at achieving continuous EIS operations in terms of hardware and software components, and so on.

Chapters in this book use common concepts as a foundation and expand into the different core areas. This sense of integration is notable in many places in this book. For instance, EIS concept has presented in the beginning of chapter five as opening to the following sections. Likewise, authors in chapter six and seven, sufficiently used the information about EIS in the chapter five, and build upon it in their own chapters.

Moreover, another form of integration appears when chapters link their conclusions to a specific significant point. This makes you feel as each chapter contribute and serve this point from different angles. For example, Decision making. Chapter two conclude that at all business level, business intelligence consider as glue between operative system and decision support system (DSS). Chapter three in page 42, illustrate how decision support system (DSS) and knowledge system used to support organisational decision making. Chapter seven presented the most challenging aspects of data management like data availability, data security, and data integrity, and how they are important for decision-making purposes. And so on.

Remarkably, a great effort has been made to integrate the contents of these chapters in order to produce beneficial piece of work.

The excellent diagrams throughout the book provide clarity to the underlying concepts. However, these could be improved through the use of colour. Colour would focus attention and delineate more clearly some of the different concepts incorporated into diagrams.

From the reviewer point of view, the book covers a wide range of IT/IS management and offers a valuable selection of real-world cases. These in-depth cases, about global organisations and regional companies practice, are assisted by the clarity of presentation and the author's experience (as Institute of Management and Technology heading and IT management lecturer), providing a bridge to link leading edge research and professional practice. This is an aid for effective learning and helps to achieve the aims of the book.

To be brief, the book is comprehensive and a joy to read. The style of presentation makes this topic accessible as each chapter has learning outcomes. Contributors have done an excellent job in first incorporating an enormous amount of material and then organising it in an efficient way to make a clear and readable treatise on Enterprise Information Systems Management. This is a complex and challenging within such a dynamic area of study.

In conclusion, the book will be beneficial to students, academics and practitioners involved in IT/IS management implementation. The book presents the IT management concepts in understandable and simple style. This will be beneficial for both undergraduate and postgraduate students as the book provides the fundamental knowledge require for these students. Also, this will book is useful for practitioners involved in IT/IS management implementation as it offers updated information and valuable selection of real-world cases in modern IT industry.

The reviewer believes that this is an exciting book and will provide a classic reference text in this field. I highly recommend "Always-On Enterprise Information Systems for Business Continuance, Technologies for Reliable and Scalable Operations"