

ADOPTION OF ONLINE PURCHASING IN COMMUNITIES, AND ITS SOCIO-ECONOMIC IMPLICATIONS IN REGIONAL CENTRAL QUEENSLAND, AUSTRALIA

W. J. Taylor, G. X. Zhu, J. Dekkers and S. Marshall
Central Queensland University

ABSTRACT

This paper analyses the general trends of online purchasing in Central Queensland (CQ) communities during 1999-2002 and identifies the socio-economic factors affecting online purchasing activities. The Online Purchasing Indicator, defined as a combination of percentages of online purchasers and of regular purchasers (>one item/month) within a group, is applied to compare these activities between these two groups. The study identifies that four factors, namely 'personal attributes', 'knowledge', 'trust' and 'need' may play important roles in online purchasing decisions. The research found that regional economic bleeding associated with low local adoption failing to provide justification for local business to adopt electronic purchasing support has not yet reached significant levels.

INTRODUCTION

The last decade has witnessed a considerable increase in the use of e-commerce by a wide range of businesses, organisations and institutions in developed economies. The International Telecommunications Union (ITU) claimed that global e-commerce was valued at \$37 billion in 1998 and was expected to grow by 80% to US\$707 billion in 2003. It also estimated that the value of business-to-business (B2B) e-commerce in 2001-2002 was in a range from US\$100 billion to US\$400 billion, and that the value of business-to-consumer (B2C) was in a range from US\$25 billion to US\$90 billion (Rashid & Al-Qirim, 2001). To date much of the research on adoption of e-commerce has focused on national and international trends. The factors affecting the adoption of e-commerce in regional areas, particularly in Australia are not well documented.

A recent report in the United Kingdom (National Statistics 2002) indicated that 'security concerns' and perceptions of 'lack of necessity' are the main reasons for non-adoption of e-commerce. In North America, the National Telecommunications and Information Administration (NTIA 2002, p.31) found that geography has little impact on the selection of online activities.

However, they found that other socio-economic factors, such as gender, age, race and income do have some relationships with Internet user's selection of online activities including e-commerce.

Since the establishment of the Australian National Office for the Information Economy (NOIE) in 1997 as Australia's lead agency for information economy issues, the government has given high priority to the improvement of national Information and Communications Technologies (ICT) infrastructure as the means to maximise the gains from e-commerce (NOIE 2001a, p. 6). As a result, Australia has been ranked 2nd (behind the USA) among 60 countries in its development of an e-business environment (NOIE 2002, p. 37). NOIE (2001b) also reported that e-commerce could increase efficiency savings in business during the early adoption stages. It also found that there were significant overall net benefits to the nation from the adoption of e-commerce, and predicted that it could increase Australia's GDP by 2.7% by 2007 (DCITA 2000a).

Despite the low population density across vast areas of Australia, the Australian Government wants the benefits of ICT to be spread evenly across the country (DCITA 2000b). However, the adoption of ICT and e-commerce in regional Australia has until recently not been well researched or documented. Central Queensland (CQ), covering approximately 141,936 km² and with a population of 183,753 has had reasonable and growing access to ICT infrastructure over recent years. Engaging in e-commerce at the community level in this low population density region has social and economic significance for the regional development. Whilst analysing socio-economic factors affecting home Internet usage patterns, Taylor et al. (2003) found people within 25-39 year old age cohort, and those with higher education levels tended to use Internet more for online purchases. Other than this research, the adoption of e-commerce at the community level in this low population density region has remained unexamined.

Researchers (Devaraj et al. 2002, Gefen & Straub 2000, Jiang et al. 2000) have employed adaptations of the Technology Acceptance Model (TAM) as originally described by Davis et al., (1989) to examine the variety of external variables related to the adoption of e-commerce. Based on the TAM, Stylianou et al. (2003) suggested the evaluation of individual perceptions about e-

commerce should consider four variables: usefulness, ease of use, importance and security. As an extension of the TAM, Zhu et al. (2003) proposed that these variables are actually internal factors/barriers and could be interrelated, and removal of any one of these barriers could produce a chain reaction that leads to adoption.

E-commerce has been traditionally defined as commercial transactions taking place over electronic networks, particularly the Internet. The two main forms of transactions being: business-to-consumer (B2C), and business-to-business (B2B) (Barnes & Hunt 2001). This paper aims to: 1) create a universal indicator to make e-commerce activities comparable between groups within and between communities; 2) analyse socio-economic factors affecting online purchasing activities, and their development trends across 1999-2002; and 3) examine some likely superficial impacts of community e-commerce on the regional economy and B2B engagement within the region. In order to assess the commercial activities thorough the home Internet, the term 'online purchasing' is used to provide a focus on consumer-to-business (C2B) perspective. Whilst the transaction value for B2C and C2B is virtually same, the transaction objectives are different, because B2C looks at the profit for the business whilst C2B looks at the cost saving when compared to the similar products at local prices and customer satisfaction after the transaction occurred.

METHODOLOGY

Data collection

Central Queensland Social Survey was administrated through a ten-station Computer-assisted Telephone Interviewing (CATI) system (Mummery and Schofield 2002). The CATI system ensures that the interview sample reflects the socioeconomic profile of the region. The survey was conducted in November each year across 1999-2002. A random selection approach was used to ensure that all respondents had an equal chance to be contacted by telephone. The survey sample was drawn from the telephone database by using the CATI program to select interviewees, and only one eligible person (≥ 18) was selected as a respondent of a household for the thirty-minute interview.

The nine socioeconomic profiles/factors (see Fig. 1) drawn from the survey were used in this analysis. This is similar to the survey methods used by the Australian Bureau of Statistics (ABS 2001). Figure 1 outlines the relevant abstraction from the question framework used to obtain adoption patterns for online purchasing in the region

Definition of purchase frequency and the community Online Purchase Indicator (OPI)

Online purchasers in a given community can be classified as irregular and regular purchasers. In this study, irregular online purchasing was defined as purchasing less than one item per month and regular purchasing defined as purchasing more than one item per month.

The Online Purchase Indicator (OPI) is introduced here to compare the overall online purchasing activity between groups within each of socio-economic factors identified above in the Central Queensland communities surveyed. For a given community group, an OPI is defined as a combination of the percentages of irregular online purchasers and the percentage of regular purchaser. It can be expressed as $OPI (\%) = \% \text{ of online purchasers} \times \% \text{ of regular purchasers} \times 100$.

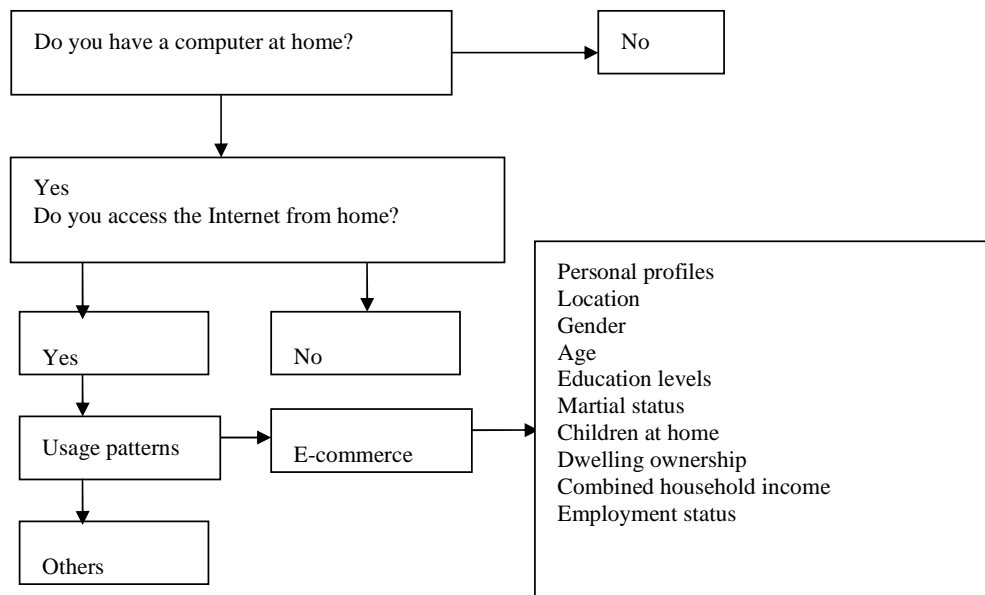


Figure 1 CQSS computer/Internet use question flowchart each year from 2000 to 2002

Data analysis

This paper analyses the general trends of online purchasing of irregular and regular online purchasers. The nine factors outlined above were analysed individually for their associations with the overall online purchasing activities expressed as OPI. Graphic demonstrations were used to explain the trend of online purchasing for the period 1999-2002. As the data collected were nominal (frequency) data, non-parametric methods (Chi-square tests) were employed to examine significant associations between OPI and groups of each a variable/factor (Kinnear & Gray 1998, p. 110). Instead of tables, graphs are used to demonstrate these associations/differences each year and the trends across 1999-2002.

However, some of these factors could be interrelated. Therefore, Binary Logistic Regressions with categorical covariates were applied to identify factors contributing to OPI without the interference of other factors. An Odds Ratio (OR) along with regression coefficient (Knoke & Bohmstedt 1994, p. 180) was used to measure the weight of associations of each factor with these percentages. An OR value of 1.00 indicates that two variables were unrelated; an OR>1.00, indicates the positive covariation of the variables (eg, age and the percentage of online purchasers); an OR<1.00, indicates the negative or inverse covariation. As the covariates (factors) are categorical, the first category of each factor was used as a reference (OR = 1.00) to detect the association of category variation (eg, from younger to older age groups) with the percentages of online purchasers or regular purchasers.

RESULTS

General trends of online purchase in Central Queensland

Table 1 shows that percentages of online purchasers over the total population surveyed are relatively low; just over 16% in 2002. However, Figure 2 also shows that there was a steady growth of online

purchasing through home Internet use over the period. The rate of this growth slowed down dramatically in 2002 from over 100% from 1999 to 2000, to 25% from 2001 to 2002. If this growth trend model is valid beyond 2002. It is predicated that by 2005, the online purchase rate will reach about 19.1% of total population in CQ. However, the model predicts that growth rate will drop to less than 1 % from 2005 onwards.

From 1999 to 2001, there was a slight increase in the percentage of irregular online purchasing and decrease in regular online purchasing in Central Queensland as shown in Figure 3. This indicates that the majority (c. 80%) of Central Queenslanders had purchased less than one item per month online during that period. However, there was a noticeable increase in purchasing frequency in 2002, with 24% of home Internet users being regular purchasers, a 20% increased from 2001.

Year	1999	2000	2001	2002
Sample No	1138	1237	1216	1240
% of home Internet adoption	23.6	36.1	42.1	44.7
% of online purchasers with adopters	17.7	23.5	31.6	37.2
% of online purchasers over total population sampled	4.2	8.5	13.3	16.6

Table 1 Home Internet access and online purchasing behaviour in Central Queensland

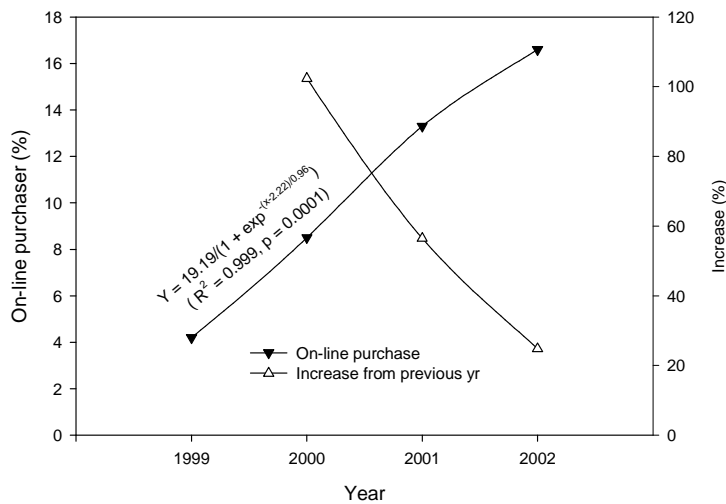


Figure 2 The general trend of online purchasers' behaviour and percentage of annual increase from 1999 to 2002 in Central Queensland.

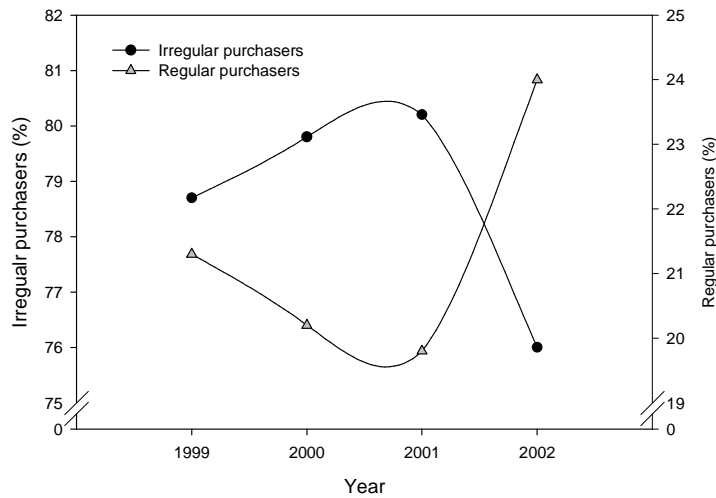


Figure 3 Comparisons of online purchasing patterns (irregular vs. regular) in Central Queensland – 1999-2002

The effects of socioeconomic factors on online purchasing.

Geographic location

Figure 4 shows that except for 2000, people living in townships have a more active role in online purchasing when compared to those living in cities and rural areas. It is interesting to note that in 1999, people living in townships and rural areas were much more active online purchasers than those in cities. It can be inferred that this indicates that those living away from city centres have stronger desire to use online purchasing because of the relative inconvenience of shopping associated with geographical location. Nevertheless, the adoption of online purchasing was very slow until 2002 when there was a dramatic increase amongst those living in different locations (Figure 4).

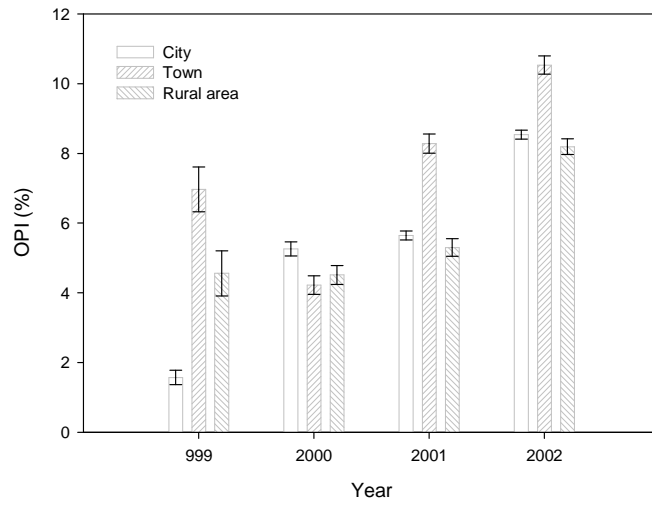


Figure 4Trends in adoption of online purchaser for people living in cities, townships and rural areas, 1999-2002

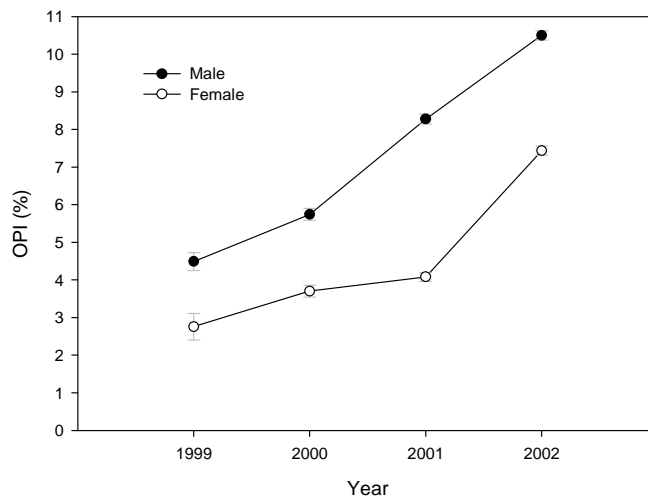


Figure 5The effect of gender on adoption of online purchaser in Central Queensland, 1999-2002

Gender

The effect of gender on adoption of online purchasing is displayed in Fig 5. Males were consistently higher users of the Internet from home for online purchasing compared to females. This may suggest that men are more adventurous and have a more confidence and trust in purchasing on line. It may also suggest that there is a greater range of items suitable for males than females available online.

Age

Figure 6 displays the effect of age on online purchasing. Except for 2000, people within the 25-39 age cohort were most active in purchasing online from home, followed by those in the 40-55, 18-24 and >55 age cohorts. However, the online purchasing behaviour of those in the 18-24 age cohort steadily increased from 2000. The growth in online purchasing of the seniors (>55 age cohort) is uncertain due to lack of an OPI measure in 1999 and 2001, even though its OPI matched the youngest age group in 2002.

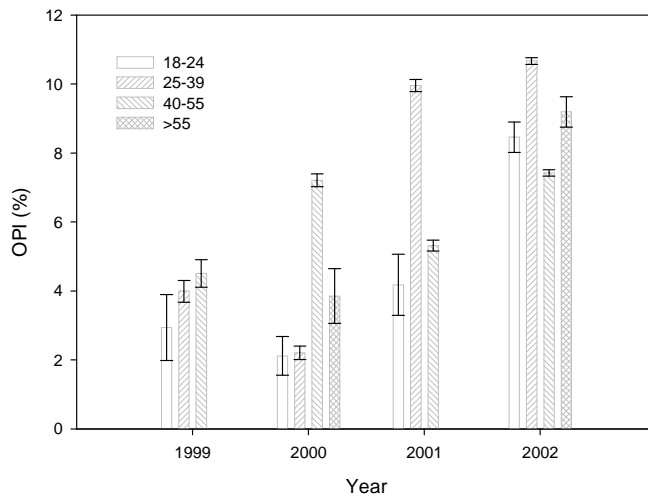


Figure 6The effect of age on adoption of online purchasing in Central Queensland, 1999-2002

Education levels

Figure 7 shows that for the period 1999 – 2000, people with University degrees had a higher OPI than those with lesser qualifications.

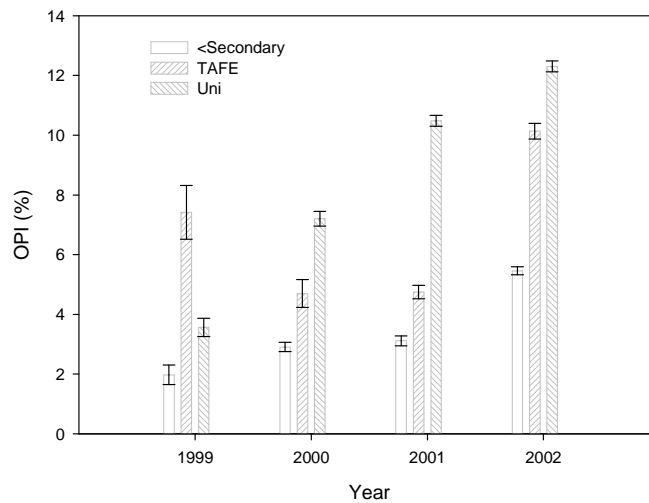


Figure 7 The effect of education levels on the adoption of online purchasing in Central Queensland, 1999-2002

The next highest OPI was for those with TAFE (Technical) qualifications. Even after 2000, the OPI for people with University degrees was higher than those with TAFE (technical) qualifications. In addition, the OPI of the people with University degrees increased linearly when compared with those with lower qualifications who did not display a discernable pattern of usage.

Marital status

Generally, unmarried people were greater users of online purchasing from home when compared to their married counterparts (Fig. 8). Whilst the causes for this are unknown, the patterns may reflect a greater availability of products of more interest to unmarried people and/or a greater disposable income within the unmarried people.

Children at home

Figure 9 demonstrates that there was no consistent difference in OPI between people with and without children. However, the OPI for those without children increased dramatically at the end of the four-year period when compared to those with at least one child at home. The reasons for this are not clear

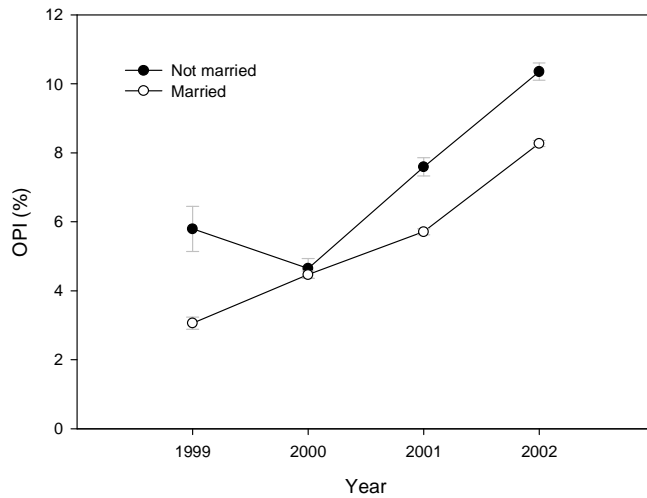


Figure 8The effect of marital status on home adoption of online purchasing in Central Queensland, 1999-2002

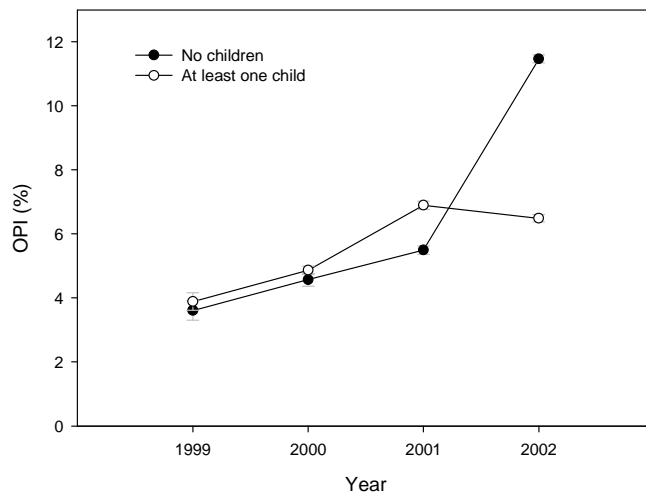


Figure 9The effect of children at home on the adoption of online purchasing in Central Queensland 1999-2002

Dwelling ownership

Except for 1999, people who rented their dwelling were less active in online purchasing when compared to those who own their properties (Figure 10). This suggests that people who rent may have less money, but this conclusion may also be impacted by education, marital status and age.

Combined household income

Figure 11 displays the effects of combined household income on online purchasing behaviour. Prior to 2002, people with lower household income (<AU\$400 per week) had very low OPI when compared to their counterparts with higher income. This was especially noticeable in 1999, when the online purchasing activity for this lower income group was virtually non-existent. However, as evidenced by the matched OPI between two income groups in 2002, over the later period there was a growth of OPI in the lower income group. This may be related to the general rise in the proportion of people who have home based Internet access.

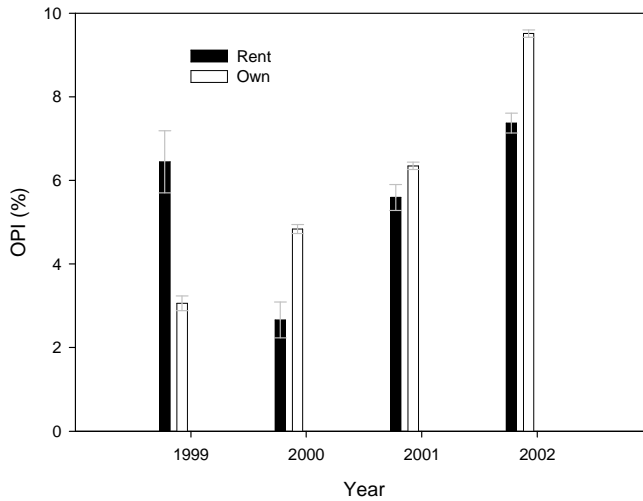


Figure 10 The effect of dwelling ownership on adoption of online purchasing in Central Queensland 1999-2002.

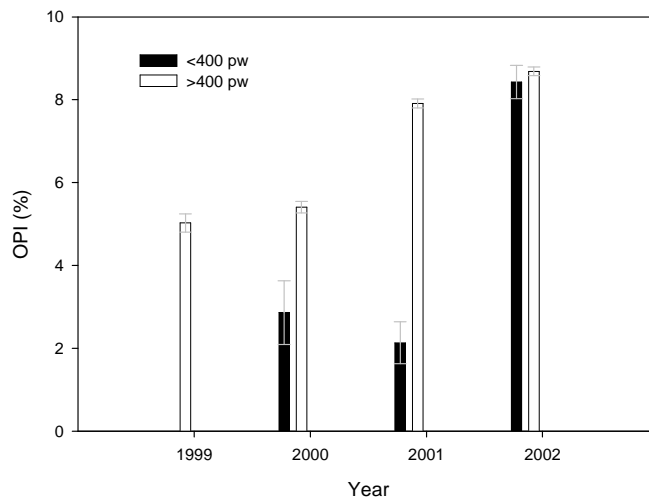


Figure 11 The effect of combined household income on adoption of online purchasing in Central Queensland, 1999-2002.

Employment status

As may be expected, those fully employed had higher OPI across the 2000-2001 period when compared to those who were unemployed (Fig. 12). There was also steady increasing trend in OPI for those fully employed people across the period, whereas there was no clear increasing trend for those semi- and un- employed. However, it is also notable that the online purchasing activities of the semi- and un- employed groups increased dramatically during 2001-2002 period, suggesting that financial capacity in itself may not be a factor limiting people engaging in purchasing online.

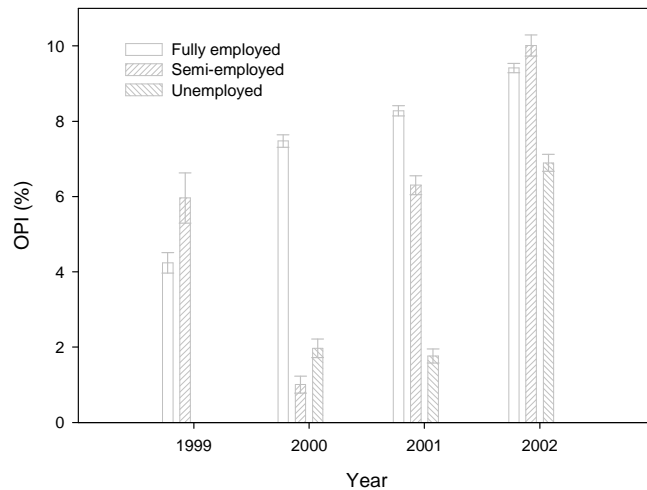


Figure 12 The effect of employment status on the adoption of online purchasing in Central Queensland 1999-2002.

Factors determining the participation of e-commerce in CQ

It can be seen that the factors affecting online purchasing behaviours varied during the period 1999 – 2000 (Table 2). Three external reasons were considered as possible rationale to contribute these variations: other external factors, such as the development of e-commerce market; internal factors, such as people's understanding of, and attitudes towards e-commerce which could be different across years; and statistical factors, such as sampling errors. However, some of the factors, such as location, age, education level, marital status and household income, appeared more than once across the 1999-2002 period. This could suggest that these factors were less affected by environmental changes during this short period of time, but they had determinant effects on people's decision for online shopping. Therefore, any variation of these factors could influence people's decision to engage in online purchasing activities. Further examination of the data presented in Table 2 resulted in the following interpretations.

Factor	Category	Online purchasers				Regular purchasers			
		1999	2000	2001	2002	1999	2000	2001	2002
Location	City		1			1		1	
	Town		2.07			10.41		4.95	
	Rural area		0.91*			20.65		2.34	
Gender	Male				1				
	Female				0.69				
Age	18-24	1	1					1	1
	25-39	3.49	0.92*					0.07	0.15
	40-55	5.76	3.22					0.04	0.20
	>55	7.24	1.40*					0.03	0.28
Education levels	Secondary			1	1	1	1		
	TAFE			2.31	1.52	2.48	4.24		
	Uni			1.08*	1.77	1.62	2.41		
Marital status	Not married		1		1			1	
	Married							0.27	
			0.37		0.53				
Children at home	No children		1						
	> one child		3.19						
Dwelling ownership	Rent						1		
	Own house/flat						0.18		
Household income	<AU\$400	1	1	1					1
	>AU\$400	0.28	0.33	0.35					0.35

(*-indicates no significant relationship with the reference of category 1)

Table 2 Odds ratios abstracted from Binary Logistic Regressions analysis to compare factors determining online purchasing 1999-2002 in

People living in townships (as opposed to cities or rural areas) were more likely to engage in purchasing online (both as irregular and regular purchasers) when compared to those in the cities. Those older than 25 were more likely to make online purchases when compared to those in the 18-24 age cohort. However, the 18-24 age cohort was more likely to become regular online purchasers once they had decided to adopt online shopping. People with TAFE or higher education were more likely to engage in online purchasing when compared to those with lower qualifications. People who were not married were more active in online purchasing when compared to their married counterparts. People with lower household incomes were more likely to engage in e-commerce for cheaper commodities.

DISCUSSION

The Introduction of OPI made it possible to compare e-commerce activities between consuming groups within and between communities. The extended application of this concept is that it can be applied to compare e-commerce activities between regions and countries as well. However, the OPI needs to be refined for future use, for example by the inclusion of purchasing/trade values. The reason for the current exclusion of purchasing values in the calculations of OPI is that the present e-commerce research is community based. The inclusion of purchasing value would inevitably involve B2B transactions, e.g., by farmers who may also claim to be home Internet users, and this would not fit our definition of community e-commerce.

Comparison/contrast analysis within a single factor indicated that except for 2002, people with higher household income had higher OPI than lower income counterparts (Fig.11). Regression analysis (Table 2) indicated that household income was one of the factors affecting home adoption of online purchasing, and that those with lower income were more likely to engage in online purchasing. This difference does not indicate a contradiction. This is because the single factor analysis did not consider other interrelated factors which could be the main contributors to adoption.

For example, the difference of OPI in Fig 11 may not have resulted from the difference of household incomes, and it could be due to differences of age and education levels (Table 3) which are two major factors affecting the adoption of online purchasing (see Table 2). The regression analysis was an essential process to determine the interrelated factors that did contribute essentially to the dependent variable (adoption of online purchasing). For example, employment status was a factor in the present regression analysis.

It is necessary to consider a comparison of online purchasing as a component of e-commerce adoption in CQ with other regions. At the present time there are no data available for comparisons regarding the adoption of online purchasing at either national, and regional levels in Australia, or at regional levels for other countries. Compared to the limited data available from the reports from USA (NTIA 2002, p. 30) and UK (National Statistics 2002, p. 6), it seems that adoption of community e-commerce in CQ lags behind both the USA and UK (Table 4). However, these differences do not necessarily suggest low adoption levels of e-commerce in CQ. This is because in the USA research, differences between online purchasing and e-banking is not made clear. Whereas, the research reported here, is confined to home based Internet use. It does not include personal e-commerce conducted from public access points or from workplaces.

Income	Education levels		Age groups		
	<Secondary	>TAFE	18-24	25-39	40-55
<AU\$400 pw	65.4	30.3	45.2	16.1	76.8
>AU\$400 pw	34.6	69.7	54.8	83.9	23.6
p	<0.0001		<0.0001		

Table 3 Associations between household income and the corresponding adoption percentages in education level and age group in Central Queensland, 2002

	Aug. 2000 (%)	Sept 2001 (%)	Oct. 2002 (%)
USA	13.3 (includes online purchase and banking)	21.0 (includes online purchase and banking)	
UK			18.1
CQ	8.5	13.3	16.6

Table 4 Comparisons of adoption of e-commerce between the USA, UK and CQ (Aust)

In addition, it is assumed that, for these already connected home Internet, no extra costs are occurred for online shopping when compared to other Internet activities. People may engage in online purchasing not only for convenience, but also save costs. Nevertheless, the online purchasing in communities could embrace a wider range of activities. This research focused on online purchasing of commodities and services, and the related frequency of purchasing. Other activities, such as online banking, online sales from small home business or online trading of household commodities, could also be considered as e-commerce within a community setting.

Finally, it has to be mentioned that the negative impact of community e-commerce may cause regional economic bleeding because the online shoppers may neglect local business in favour of distance shopping because of price or availability. The present survey found that no online purchases were made from businesses inside the CQ region. However, we should look at this positively based on two facts: 1) the current volume of this trade is minimal; and 2) it stimulates B2B transactions between regional and metropolitan levels. For example, from the data collected in 2002, it is estimated that 17% (Table 1) of households are online shoppers in the region, and 24% are regular shoppers. As a result, about 4% of total population are regular on-line shoppers in the region. The community e-commerce may push the local business to provide better prices and service through B2B engagement. This can be reflected by comments of an electronic shop owner who did not want to be named, "we realised that some local people buy something from the Internet for cheaper price, but we also have our own special purchasing channels either through the Internet or phone order. Actually, we are doing online shopping for local consumers. We even can get the cheaper price because we order goods in bulk quantities. Those who have no Internet connection at

home, no credit cards, or just simply don't trust online shopping, still buy locally. They may have to pay a little bit higher price, but they can get worry free by seeing the real products, having more choices of varieties and having one-year free labour service". However, the owner did not mention that he recently sacked a storeman not because of a reduction in client numbers, but because of a reduction in the volume of stock due to the adoption of B2B commerce. What is to be blamed for the job loss: e-commerce, ICT, or simply the emergence of any new technology? The fact is that due to the adoption of ICT, while some jobs have disappeared in the conventional service industries, more job opportunities have been emerging in ICT-related industries. Therefore, analysing the impact of e-commerce on regional economy and employment is an important task for researchers in regional development.

CONCLUSION

This paper concludes that some socioeconomic factors, such as location, age, education level, marital status and household income, have constant influence on people's decision for online shopping, as these factors are less affected by environmental changes. The imbedded attributes of these factors can be interpreted as 'personal attributes', 'knowledge', 'trust' and 'need'. The introduction of OPI provides a tentative ruler to compare e-commerce activities between groups within and between communities. The significance of this concept may lead to more comparative research in online purchasing in the future. Moreover, due to these limiting factors, the limited range of commodities available and problems with post-sale service provided by electronically enabled purchasing, the adoption of online shopping is understandably slower than home Internet adoption (Table 1). In reality it is currently at early stages of maturity and adoption and is considered as just one of the shopping options only for local consumers. Thus, the effect of regional economic bleeding due to online purchasing external to the region is not high at this stage. The adoption of online purchasing by community may force the local business to engage B2B transactions for maintaining a competitive position and retaining local consumers. However, high levels of adoption of online purchasing in regional areas may cause employment shift and further research needs to be undertaken on this potential. Online purchasing behaviour also needs to be studied in terms of the types of products purchased, the way in which electronic processes are used to aid the purchase decision as well as the socioeconomic factors affecting these behaviours within a community.

REFERENCES

- Australian Bureau of Statistics (2001). **Use of the Internet by householders November 2000** (No. 8147.0). Canberra: ABS.
- Barnes, S. and Hunt, B. (Eds.) (2001) **E-Commerce & V-Business**. London, Butterworth Heinemann
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. **Management Science**, **35**, 982-1003.
- Devaraj, S., Fan, M., & Kohli, R. (2002). Antecedents of b2c channel satisfaction and preference: validation e-commerce metrics. **Information Systems Research**, **13**(3), 316-333.
- DCITA-Department of Communications, Information Technology and (2000a) **'E-commerce: beyond 2000'**. Canberra, Australian Government Publishing Service
- DCITA-Department of Communications, Information Technology and Arts (2000b) **E-commerce Across Australia**. Canberra, Australian Government Publishing Service.
- Gefen, D., & Straub, D. W. (2000). The relative importance of perceived ease-of use in IS adoption: a study of e-commerce adoption. **Journal of the Association for Information Systems**, **1**(8), 1-27.
- Jiang, J., Hus, M. K., Klein, G., & Lin, B. (2000). E-commerce use behavior model: an empirical study. **Human Systems Management**, **19**(4), 265-277.
- Kinney, P.R. and Gray, C.D. (1998) **SPSS for Windows made simple**. Hove, UK Psychology Press.
- Knote, D. Bohrnstedt, G.W.(1994) **Statistics for Social Data Analysis**. Illinois, F. E. Peacock Publishers, Inc.: ITASCA

- Mummery, K and Schofield, G. (2001) '**Central Queensland Social Survey 2001.**' Population Research Laboratory, Centre for Social Science Research. Rockhampton, Central Queensland University.
- National Statistics (2002) **Internet access-Households and Individuals.** UK National Statistics, London.
- NOIE-The National Office for the Information (2001a) **B2B e-commerce capturing value online.** Canberra, Australian Government Publishing Service.
- NOIE-The National Office for the Information Economy (2001b) **Advancing with e-commerce-A summary of 34 case studies of small business e-commerce ventures.** Canberra, Australian Government Publishing Service.
- NOIE-The National Office for the Information (2002) **The Current State of Play-Australia's Scorecard.** Canberra, Australian Government Publishing Service.
- NTIA-National Telecommunications and Information Administration (2002) **A Nation on line: How Americans Are Expanding Their Use of the Internet.** US. Department of Commerce, Washington. D. C.
- Rashid, M. A., & Al-qirim, N. A. (2001). E-commerce Technology adoption framework by New Zealand small to medium size enterprises. **Research Letters in the Information and Mathematical Sciences, 2**, 63-70.
- Stylianou, A. C., Robbins, S. S., & Jackson, P. (2003). Perceptions and attitudes about eCommerce development in China: an exploratory study. **Journal of Global Information Management, 11**(2), 17-31.
- Taylor, W. J., Zhu, G. X., Dekkers, J., & Marshall, S. (2003). Socio economic factors affecting factors affecting home Internet usage patterns in Central Queensland. Paper presented at the **Informing Science and IT Education (InSITE) Conference**, 24-27 June, Pori, Finland.
- Zhu, G. X., Taylor, W. J., Marshall, S., & Dekkers, J. (2003). Why don't these people connect to the internet at home? -Analysing the internal barriers causing digital divide in central Queensland, Australia. **Paper presented at the The ITiRA 2003 Conference**, Caloundra, Qld.

**THE AUSTRALASIAN JOURNAL OF INFORMATION SYSTEMS
GUIDELINES FOR SUBMISSION OF PAPERS**

3 Copies of the paper should be submitted**TITLE OF PAPER**

Title of Paper should start at the top of the margin and be centred and bold, followed by Authors Name and Authors Address.

MAJOR HEADINGS

Major headings should be capitalised, bold, left-aligned and no numbering.

Sub Headings

Sub headings should have initial capitalisation, bold and left-aligned.

Document Formatting

Papers should be fully justified.

There should be no indenting of paragraphs.

Leave a double space between paragraphs.

All text must be typed in the Times Roman font in 12 pitch.

Papers should be double on A4 paper.

Margins are 2.5 cm top, bottom, left and right.

Pages should not contain page numbers.

References should appear in the text as Smith (1970) or Smith (1970, p 120). The full references should be typed on separate sheets at the end of the manuscript. The following rules should be adopted:

Monographs -

Smith, X.Y. (1970) *Advanced Accounting*, Sydney: Cobb Publishing Co.

Periodicals -

Smith, X.Y. & Smyth, A.B. (1970) "The Current Cost Controversy - Again", *Journal of the New School*, May, Vol 1, pp 10-32.

Footnotes should be numbered consecutively with superscript arabic numerals. Footnotes must appear on the page they are referred to and not as a separate sheet at the end of the manuscript.

Diagrams should be ink drawn/laser printed.

Paper should contain a 200 word Abstract.

A covering page should be submitted with the following details:

- o Title of Paper
- o Authors Name
- o Authors Address

Papers should be no longer than 20 pages in length, including tables, bibliography and figures.

However the editor reserves the right to consider longer articles of major importance

[1]