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Analysis of Internet Usage Intensity in Iraq: An Ordered Logit Model

Authors: **Almas Heshmati**[1], Department of Economics, K526, Sogang University, 35 Baekbeom-ro (Sinsu-dong) Mapu-go, Seoul 121-742 Korea, E-mail: heshmati@sogang.ac.kr, almas.heshmati@hotmail.com; **Firas H. Al-Hammadany**, Ministry of Foreign Ministry, Director of Information Technology Department, Baghdad, Iraq, E-mail: firas_hassan1969@yahoo.com; **Ashraf Bany-Mohammed**, CIS Department, College of IT, Middle East University, Amman, Jordan, E-mail: abany@meu.edu.jo

Intensity of Internet use is significantly influenced by government policies, people's levels of income, education, employment and general development and economic conditions. Iraq has very low Internet usage levels compared to the region and the world. This study uses an ordered logit model to analyse the intensity of Internet use in Iraq. The results showed that economic reasons (internet cost and income level) were key cause for low level usage intensity rates. About 68% of the population revealed that Internet access at homes is costly. Thus, it is no wonder that Internet cafés is the most commonly used mode of Internet use followed by broadband and dial-up connections. Iraq has to develop proper strategies to enhance the rate of Internet use in the country. These strategies need to focus on decreasing internet access prices, increasing awareness about the importance of the technology and internet education in schools and universities.

[1] Correspondent author

Keywords: *ordered logit; internet technology; internet usage; determinants*

Introduction

The effect of Information and Communication Technology (ICT) on output growth and economic development has been huge (Schreyer 2000), both in advanced and developing nations. The wide spread of ICT technologies has increased in the last 2 decades opening windows of opportunities to gain new knowledge and explore new business opportunities (Cawsey et al. 2003). Among the many ICT technologies, internet occupies the prime place (Ulutas and Islier, 2010). Internet user's today gain huge advantage as Internet services reveals on a daily basis new services to the market. In fact, the world has witnessed tremendous change with the advent of the internet technology (Zamozski et al., 2009). Countries' where internet technology and usage intensity was developed early, technological and economic development has been achieved at a faster rate indicating the proportional relation between the Internet and economic development (Yen, 2010).

Internet diffusion and usage intensity in Iraq have been always influenced by wars and lack of political willingness which lead to very low diffusion rates and usage intensity. Even in 2008, only 10 % of the Iraq population had access to the Internet. Moreover, among those who had internet access, usage intensity is low. This paper seeks to analyse the significant factors affecting the Internet usage intensity. At the same time, the paper aims to connect empirical results of this work to the practical use of policy makers through solid policy analysis and recommendations. This contribution will certainly facilitate the analysis of any of such issues in the future and help us to understand the most effective way to tackle such issues. In doing so, different socioeconomic and demographic factors were investigated using an ordered logit regression technique. The results of this work provide a basic and comprehensive understanding of the current states in Iraq and a foundation for other scholars for further analysis.

Remainder of this paper in organized as following, next section present theoretical foundation and framework. Section 3 provides data

description and hypothesis whereas section 4 present methodology, model specification and estimation. Section 5 offers results and analysis while Section 6 provides discussion and policy implication. Finally section 7 concludes this work.

Previous Research and Theoretical Framework

This section review different literature on Internet usage intensity which provides the base on which the framework of this work have been developed.

Positive Influence of Internet Usage Intensity

Internet diffusion and usage can have significant positive effects on the development of many economic activities in the country. The diffusion of Internet has resulted in new effective ways for communication (Valentine and Holloway 2001; Keng and Ting 2009), novel business models, and improved global business operations (Larson and Pepper 2006). Wang and Tadisina (2007) stressed the role of ICT technology utilization and business process redesign to save time and reduce costs. Moreover, Internet has opened new frontiers for research and innovations in medicine, physics and energy (Cuijpers et al., 2008). In addition, global trade and business collaboration has increased and grow significantly through e-commerce activities in the last decade (Castaneda et al. 2007; and Turban, 2008).

In summary, numerous scholars have established the positive role of Internet in all sectors of the modern economies and societies emphasizing the importance of increased usage intensity and adoption of internet technologies in all sectors by all people (Martinez-Torres et al. 2010; Barrero et al. 2010; Keng and Ting, 2009; and Yu et al., 2008). Lee and Heshmati (2006) studied global diffusion of internet. In Heshmati and Peng (2010) the issues of information and communication technologies policies and practices are discussed. Al-Mutavakkil et al. (2009) compute infrastructure indices to rank countries by their level of connectivity and services utilization. Xu et al. (2010) investigate how information technology

infrastructure capabilities are related to information technology project success from a development team perspective.

Negative Influence of Internet intensity

Though Internet access would promote access to information, technology upgrading and development, it may also result in some unwanted consequences (Alberta, 2005; Tarpley, 2001). These include issues of addiction, waste of time, crime and abuse. Lu and Wang (2008) confirmed that Internet intensity use may raise addiction to online entertainment programs such as casinos and games. Rideout et al. (2003) and Roberts et al. (2004) found that Internet intensity among children might be reflected through spending an average of over one hour each day in recreational Internet use. NCES (2003), and Quigley and Blashki, (2003) also reported the possibility of attachment to online pornography and sexual programs via the Internet especially in case of teenagers (Subrahmanyam et al., 2001; STI, 2001). In comparison with the positive effects of Internet intensity, the negative effects are marginal and may be neglected (especially in case of mature people) since they can be controlled by either technology solutions, government regulations (Sang et al., 2009) and/or self-conscience.

Research Framework

Selwyn (2003) stated that the academic understanding of people who are not using or little using Internet (i.e. low Internet intensity) is very weak. He further emphasized that Internet intensity has to be studied by developing a deep conceptual understanding of new technologies.

Many scholars and reports have developed different models for understanding Internet access and intensity determinants in different parts of the globe. Gender, age, income, education and cost (Hoffman et al., 2000) were among the most cited and studied attributers in such studies (Akman and Mishra, 2010). NTIA (2002) for instance highlights the correlations of household income, the level of education, race, and age with internet access. Hills and Argyle (2003) found that gender and age significantly influenced patterns of use, but there were remarkably few significant associations with

individual differences in personality when gender and age were controlled for. As well, Taylor et al. (2003) found that Internet usage may entail different distributions based on gender, age and income groups. Same and more was reported by Chaudhuri et al. (2005) were they found that socio-economic factors such as age, gender, race, residence, employment, and education influence households' decision for basic Internet access.

Another work by Goldfarb and Prince (2008) investigated internet adoption vs. internet usage and found that that high-income, educated people were more likely to adopt the internet whereas low-income, less-educated people spend more time online. Erevelles et al. (2003) examined the underlying processes involving consumer satisfaction and switching patterns among internet service providers using different satisfaction models. The results indicate that the satisfaction levels of the consumers are generally relatively low.

Based on previous literature and in examining the Iraqi's case, this work developed following theoretical model presented in Figure 1 to examine the contribution of: gender, age, location of residence, educational levels, employment type, and cost of use on Internet usage intensity in Iraq.

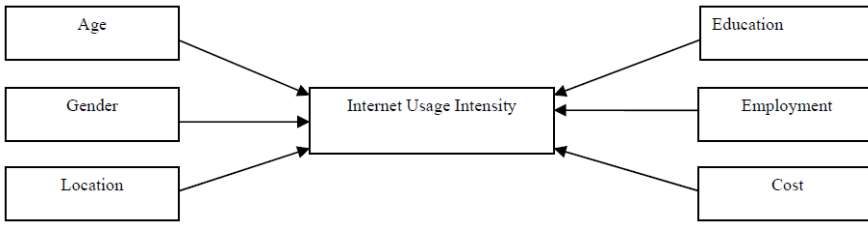

Figure 1: Factors affecting Internet intensity in its utilization in Iraq

Data and Research Hypothesis

This section presents the origin of our data, how it has been collected and how it has been used.

Data

The data used in this work was extracted from a survey on Internet status conducted by the Ministry of Foreign Affairs and Ministry of Communication in Iraq during April 2009. A sum of 15,834 observations was collected of which 9,429 were male and 6,405 female. The data was collected throughout the five regions of the Iraq (i.e. Baghdad the capital city, Middle Euphrates region, Southern, Region of north-central and finally Region of south-central). The survey data was collected through responses from a random sample of citizens in different ages, gender and level of education. Table 1 show the frequency and distribution of age, gender, education, employment, reasons for not using Internet, mode of usage, intensity rate of Internet, location and cost of obtaining Internet.

Table 1: Frequency distribution of Internet users

Internet use in Iraq		Variable
Gender (Gen) %:		
Male	9429(64)	Gender
Female	6405(34)	Gender
Age %		
Less than 12 to 25 years old	(56.1)	Age1
25 to 40	(35.4)	Age2
More than 40	(7.6)	Age3
Education (Edu) %:		
Primarily and intermediate	(13.4)	Education1
High school and diploma	(45.7)	Education2
BSc	(29.6)	Eduction3
High diploma, MSC and PhD	(12.2)	Eduction4
Employment (Emp) %:		
Unemployed	(6.7)	Employment1
Public	(39.6)	Employment2
Private	(17.9)	Employment3
Student	(35.7)	Employment4
Why do not you use Internet (Noi) %:		

Internet use in Iraq		Variable
Do not know how to use and not convinced	(45.3)	No-internet1
Not available	(31.6)	No-internet2
Economic reasons	(19.1)	No-internet3
No answer	4.1	No-internet4
Modes(mod)%		
Dialup	(10.5)	Modes1
Broadband	(11.2)	Modes2
Internet cafe	(67)	Modes3
More than one way	(1.4)	Modes4
No answer	(0.9)	Modes5
Cost of obtaining Internet (Cos)%:		
Costly	(68.5)	Cost
Suitable	(13.5)	Cost
Intensity rate of Internet(Uti)%:		
Not at all	(1)	Intensity1
Rarely or sometimes	(45.5)	Intensity2
Mostly	(31)	Intensity3
Always online	(22.6)	Intensity4
Location(Loc)%:		
Baghdad	(20.3)	Location1
Southern	(22.9)	Location2
North-central	(29.1)	Location4
South-central	(12.3)	Location5
Middle Euphrates	(20.1)	Location3

Hypotheses

Based on previous theoretical model (section 2.3), following hypothesis were developed and will be examined:

- (H1): i.e. Higher education is proportionately related with higher Internet intensity. Four educational levels have to be tested for this hypothesis i.e. Edu1, Edu2, Edu3 and Edu4.

- (H2): The Employment conditions affect Internet intensity. It consists of four factors i.e. Emp1, Emp2, Emp3 and Emp4.
- (H3): The Internet intensity is proportionately related with age. It consists of three age groups, Age1 Age2 and Age3.
- (H4): The Cost of Internet is inversely related with Internet intensity.
- (H5): The Location of residence influences Internet intensity. It consists of five locations, locatn1, locatn2, locatn3, locatn4 and locatn5.
- (H6): The Mode of internet usage influences Internet intensity. It consists of four modes, Mode1, Mode2, Mode3 and Mode4. (All categorises are defined in Table 1).
- (H7): Internet intensity is proportionately related with Gender.

Methodology, Model Specification and Estimation

Methodology: Logit Regression

Logit regression as any other regression analysis, examines the relation of the dependent variable to some independent variables. However, logit regression is used when the dependent variable is binominal. Logit regression can be extended when the dependent variable is categorical to multinomial logit model (when the categories cannot be ordered in any meaningful structure) or to an ordered logit regression (when the categories have a meaningful structure). An ordered logit model is more appropriate than OLS estimation since the dependent variable, intensity, which measures the level of intensity rate of Internet use, is an order categorical variable (Greene, 2008).

As our dependent variable is an ordered categorical data, ordered logit regression has been employed. The order logit function is the inverse cumulative distribution function associated with the standard logistic distribution. The model is made about a latent regression in the same manner as the binomial logit model. For this work, the ordered logit model was exercised and the following model has been developed:

$$Y^*_i = \alpha_0 + \beta_{Gen} Gen_i + \beta_{Cos} Cos_i + \sum_{j=1} \beta_j Age_{ji} + \sum_{j=1} \beta_j Edu_{ji} + \sum_{j=1} \beta_j Emp_{ji} + \sum_{j=1} \beta_j Noi_{ji} + \sum \beta_j Mod_{ji} + \sum_{j=1} \beta_j Loc_{ji} + \varepsilon_i \quad (1)$$

where the latent variable $y^* = 0$ if $y^* \leq 0$, and equal to J if $u_{J-1} \leq y^*$, u is utility, *i* is an index for the observation or individual; and j is an index for the choices.

We assume that **ε** is normally distributed across observations. For the same reasons as in the binomial logit model we normalize the mean and variance of **ε** to zero and one. We then have the following probabilities:

$$\Pr ob(y) = J(X) = 1 - \phi(u_{J-1} - X\beta) \quad (2)$$

For all the probabilities to be positive, the following condition must be fulfilled: $0 < u1 < u2 < \ldots < u_{J-1}$

Since the slope parameter estimates are not directly interpretable, we compute marginal effects. The marginal effects representing expected changes in the probability of Internet use E(Y = 1) as response to changes in the explanatory variables is computed and reported in Table 2. It should be noted that the marginal effects of the regresses x on the probabilities are not equal to the coefficients.

Table 2: Maximum likelihood logit model parameter estimates of Internet usage intensity (N=15,834 observations)

Variable	Coefficient	t-statistics	Mean of x-variable
Constant	-0.035	-0.645	
Gender (male=1)	0.073***	3.729	0.595
Cost	0.285***	14.400	0.313
Age2	0.087***	3.465	0.328
Age3	0.072	1.889	0.085
Edu2	0.210***	7.923	0.462

Education3	0.353***	11.27	0.262
Education4	0.557***	13.662	0.096
Employment2	0.240***	6.350	0.368
Employment3	0.248***	6.037	0.168
Employment4	0.178***	4.948	0.366
No-Internet2	0.677***	19.802	0.219
No-Internet3	0.834***	23.996	0.178
No-Internet4	1.205***	36.012	0.455
Modes2	0.049	1.298	0.115
Modes3	0.270***	8.858	0.618
Modes4	0.544***	7.121	0.012
Modes5	-2.371***	-53.990	0.156
Location2	-0.349	-1.202	0.226
Location3	0.055	1.838	0.187
Location4	0.044	1.575	0.256
Location5	0.010	0.307	0.126
RHO[2](ρ)=	0.255		
LR[3]	10710.26		
Critical value	X2(nn, p=0.05)=32.67		

***Denotes statistical significance at the 1% level (two-sided test)

**Denotes statistical significance at the 5%level (two-sided test)

Results and Analysis

Empirical findings

As can be noted, ordered logit model uses a maximum likelihood method to accurately estimate the empirical model (Greene, 2008). Due to the use of maximum likelihood techniques, R-square measure cannot be used to measure the significance of the model fit. In such, chi-square test can

[2] RHO = 1 - (LL1/LL0), where here LL1= Unrestricted log likelihood and LL0 = Restricted log likelihood function

3 LR = 2 (LL1 - LL0) where LL1 = Unrestricted log likelihood and LL0 = Restricted log likelihood function

better measure the significant of the model fit. According to the result illustrated in the Table 2, the model with the highest RHO (ρ=255) indicates a best fitted with data (McFadden, 1974). Furthermore, the LR test value (LR=10,710.26) exceeds it's the critical value (CV=32.67) at the 5% level of significance. The test result indicates that the effect of the model specification is statistically significant (Greene, 2008). In more detail, the calculated LR value in this model was larger than the critical value in 5% level of significance, which indicates that the null hypothesis (the model with only intercept) is rejected and the explanatory variables used in the model are all jointly significant.

Table 2 represents the results of the coefficient and t-statistics under ordered logit model, sixteen out of the twenty one explanatory variables are found to be statistically significant at the 5% level. Only Age 3 (Age More than 40), Modes 2 (Broadband), Location 2 (Middle Euphrates region), Location 3 (Southern Iraq), Location 4 (Region of north-central) and Location 5 (Region of south-central) are insignificant.

The results of the empirical model are ranked according to the size of the marginal effects associated with each of the factor variable presented in Table 3. Since the factors are standardized to have a mean of zero and variance of one, the marginal effect indicate how one unit change in the factor impact the probability of intensity rate of Internet use. The marginal effect describes the relative relation and effect of each level of independent variable in relation with dependent variable.

When the probability=1 (not at all) or probability=2 (Rarely or sometimes), the marginal effect indicate that the No-Internet 4, followed by No-Internet 3 and No- Internet 2 have the largest negative effect on Internet intensity rate. For Education factors, Education 4 followed by Education 3 followed by Education 2, the marginal effect indicates that the three education variables have second largest negative effect (when the probability equal 1 or 2). In case of Employment, Employment 3 and Employment 4, marginal effect indicates that they have negative lower effect. Similarly, the marginal effect for Internet mode, Mode 4 followed by Mode 3 recorded negative effect. Age 3 has negative marginal effect. Gender

(male) has negative marginal effect than female. Cost variable has negative marginal effect.

When probability=3 (Mostly) or probability=4 (Always online),the marginal effect indicate that the educations categorize and employment type have the largest effect and the amount of this effect increase positively with increasing of level of educations, for employment type the higher effect is for Employment 2 (public sector). The type of Internet connections (mode) the marginal effect indicate that the mode 3 (Internet Cafe) have the largest effect among the fifth type of modes, the gender (male) have higher probability (marginal effect) than female when the probability equal 3 or 4 while Gender (male) have lower probability (marginal effect) than female when the probability equal 1 or 2. The cost factor has positive effect when the Probability is mostly or always on line.

In general term, results indicate that key reason for low internet usage intensity is due to "not knowing how to use" followed by "economic (cost) reasons".

Table 3: Marginal effects obtained from estimation of logit model for Internet usage intensity

Variable	Probability1 Not at all	Probability2 Rarely or sometimes	Probability3 Mostly	Probability4 Always online
Constant	0.0066	0.0055	-0.0069	-0.0051
Gender (male=1)	-0.0135	-0.0113	0.0142	0.0106
Cost	-0.0526	-0.0437	0.0554	0.0410
Age 25 to 40	-0.0526	-0.0437	0.0554	0.0410
Age More than 40	-0.0162	-0.0134	0.0170	0.0126
Education2	-0.0389	-0.0323	0.0409	0.0303
Education3	-0.0652	-0.0542	0.0686	0.0508
Education4	-0.1027	-0.0854	0.1080	0.0801
Employment2	-0.0444	-0.0369	0.0467	0.0346
Employment3	-0.0458	-0.0380	0.0481	0.0357
Employment4	-0.0329	-0.0274	0.0346	0.0257
No-Internet2	-0.1249	-0.1038	0.1314	0.0974

No-Internet3	-0.1537	-0.1278	0.1617	0.1198
No-Internet4	-0.2222	-0.1847	0.2337	0.1732
Modes2	-0.0091	-0.0075	0.0095	0.0071
Modes3	-0.0499	-0.0415	0.0525	0.0389
Modes4	-0.1004	-0.0835	0.1056	0.0783
Modes5	0.4371	0.3633	-0.4597	-0.3407
Location2	0.0064	0.0054	-0.0068	-0.0050
Location3	-0.0102	-0.0085	0.0107	0.0079
Location4	-0.0081	-0.0068	0.0085	0.0063
Location5	-0.0019	-0.0016	0.0020	0.0015

Now if we go back to the hypotheses presented in section 3 and analyze them based on estimation results, following assessment can held:

H1: Higher education is proportionately related with higher Internet intensity. (Illiteracy plays significant effect in Internet intensity).

Yes. At higher probabilities, Edu4 has higher significance to Internet intensity.

H2: Employment conditions affect Internet intensity.

Yes. The employment levels affected the Internet intensity significantly.

H3: Internet intensity is proportionately related with age.

No. We couldn't find enough evidence to say support this hypothesis as only age groups of 25-40 years have recorded higher Internet intensity.

H4: Cost is inversely related with Internet intensity.

Yes. The higher cost has reduced the Internet intensity and use. (Economic reasons play significant effect in Internet intensity).

H5: Location influences Internet intensity in Iraq.

No. we couldn't find any indication of significance. Location can be said to have insignificant effect on Internet intensity in Iraq.

H6: Internet Access Mode influences Internet intensity.

Yes. The Internet café has higher Internet use and intensity than home broadband access of Internet in Iraq. We say that availability of rich ICT infrastructure plays significant effect in Internet intensity.

H7: Internet intensity is proportionately related with Gender.

Yes: There is gender divide in terms of intensity (Higher Intensity for male).

Heteroscedasticity

The heteroscedasticity issue is important, because many micro-economic data are thought to have heteroscedasticity, which implies that the mean function cannot be estimated correctly unless the variance function is estimated at the same time. However in use of micro data it is often common to expect that different groups of users are different in behavior. These differences imply to expect different behavioral responses and the need to account for heteroscedasticity. The test is accounted for in Verbeek (2004, p. 200). Assume that the variance of the error term depends on an exogenous variable, zi , written as:

$$(3)\ v(\varepsilon_i / x_i) = h(z_i'\theta).,$$

where h (o) is a non-zero constant. If the value of θ is not equal to zero, the variable z_i will have an impact on $v(\varepsilon_i / x_i)$ and this is the case of heteroscedasticity. If the value of θ is equal to zero, the variable z_i will have no impact on $v(\varepsilon_i / x_i)$ and the case of homoscedasticity will prevail. This issue is statistically testable.

In accounting for heteroscedasticity, it is possible to investigate whether heteroscedasticity of known or unknown form. In this case we investigate base on assumption of known form and function of specific consumer characteristics. The estimation results assuming heteroscedasticity of known form and multiplicative are presented in Table 4. The form of heteroscedasticity is as follows:

$$(4)\ Var[\varepsilon_i | x_i] = [\exp(\theta_1 + \theta Z_i)]^2$$

The LR test value for order logit model with heteroscedasticity (LR=103.54) exceeds the critical value (CV=12.59) at the 5% level of

significance [4] and for 6 degrees of freedom. The test result for Ho: homoscedasticity ($H_o : \theta = o$) indicates that the effect of the model specification is statistically significant (Greene, 2008) suggesting presence of heteroscedasticity. The results for heteroscedasticity test of the order logit model presented in Table 4, shows that education category groups of high school and diploma (second group), B.Sc. (third group), and high diploma, M.Sc. and Ph.D. (fourth group) are all negative in relation with the lower level of education as reference group and statistically significant factors that define the model of Intensity in using Internet in Iraq. The same can be noticed in the category of employment type for public sector (Employment 2), private sector (Employment 3) and even students (Employment4) where the results are negative for Employment 2 and Employment 3 and positive for Employment 4 and all are statistically insignificant for Internet Intensity usage in Iraq.

The logistic regressions coefficient for Education 2, Education 3 and Education 4 are equal to 0.186, 0.203 and 0.134, the interpretation of that are decreasing the conditional variance by $\exp(-0.186)^2$, $\exp(-0.203)^2$ and $\exp(-0.134)^2$ consecutively. The Employment 2 and Employment 3 variables are lowering the conditional variance by $\exp(-0.036)^2$ and $\exp(-0.076)^2$ but Employment 4 increase the conditional variance by $\exp(0.035)$ but as shown in Table 4 the t-test for employment 4 is insignificant. The heteroscedasticity test revels that the model under homoscedasticity is misspecified and the more educated person has less variation in Internet use (Intensity) than the less educated ones. Also the public, and privet employed have less variation than unemployed and the students.

Table 4: Variance function

Variables x	Definition	Coefficient	t-statistic	Mean of x
Education2	High school and diploma	-0.186***	-6.748	0.462
Education3	BSc	-0.203***	-6.536	0.262
Education4	High diploma, MSC and PhD	-0.134***	-3.151	0.096

[4] LR=2(LL1-LL0) where LL1=Unrestricted log likelihood, and LL0 = Restricted log likelihood functions imposing $H_0 : \theta = 0$

Employment2	Public	-0.036	-0.982	0.368
Employment3	Private	-0.076	-1.846	0.168
Employment4	Student	0.035	0.980	0.366

***Denotes statistical significance at the 1% level

Discussion and Policy Implication

In general term, Internet usage intensity in Iraq is influenced by gender, age, education level, employment and cost of service. However, these factors have different level of influence on internet usage intensity. People with age of 25-40 years registered higher Internet usage intensity compared to those with more than 40 years old. As well, public service employment registered higher Internet intensity due to higher Internet access opportunities in government departments compared to others. For location, location 3, location 4 and location 5 recorded very low internet usage intensity (which may be due to the poor socio-economic development and lower income levels in these regions).

The cost of Internet can be said to be the most encumber force on Internet usage intensity especially if we know that the level of income of major population of Iraq is low. Remarkably, this was reported much earlier in Ghattas (2002) when the monopoly was controlling Internet sector in Iraq. More seriously, Internet intensity of broadband modes was found to be low. As broadband represent the future of internet, Iraqi government have to create initiatives and policies that contribute to increased broadband diffusion in Iraq. The marginal effects of the independent variables studied under ordered logit model revealed the same. The results of the ordered logit model suggest that when intensity=3 (Mostly) or intensity=4 (Always online), the education level, employment type and Mode3 (Internet Cafe) have significant positive effect on Internet use intensity in Iraq.

However, the use of internet café's can be very different among different genders. Based on our knowledge of Iraqi culture, social factors such as the family structure, customs and traditions may in some cases act as hindrances especially for females. Moreover, some elders in the Iraqi

society would not encourage Internet connections at homes as they believe it would be highly difficult to control internet usage by their children.

We believe there is a need for a concrete framework to increase internet usage intensity in Iraq. This should include awareness actions, policies for promoting installing country-wide advanced broadband infrastructure, stratigies for attracting foreign direct investments in ICT and Internet technology areas, inclusion of internet education in educational curriculum, and direct government incentive to lower internet access and use costs.

Conclusions

Iraq has very low internet usage rates relative to other nations in the world. To understand the aspects influencing internet usage rates in Iraq, this study developed a theoretical model and examined key factor affecting internet usage in the country. As in many other countries, Internet usage rates is influenced by several key factors such as age, education, employment, people's level of income. However, unlike other countries, these factors and more cultural and economical factors shape the internet usage rates in Iraq. For instance, Internet café is the most commonly used mode of Internet use. Yet, cultural factors hinder the equality to access internet cafes based on gender (were male have more access to such café's). Moreover, broadband access at homes it still very costly for most Iraqi's. As well, regional unbalance in terms of internet promotion is creating a notable digital divide. As Iraq has just started their development in the new era, Iraq government have to create proper policy plans and tools to address these issues and increase internet usage rates which will be very critical for the country development.

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