Patterns of digital uses among Israeli Arabs – between citizenship in modern society and traditional cultural roots

Sabina Lissitsa


To link to this article: http://dx.doi.org/10.1080/01292986.2014.981555

Published online: 11 Dec 2014.
ORIGINAL ARTICLE

Patterns of digital uses among Israeli Arabs – between citizenship in modern society and traditional cultural roots

Sabina Lissitsa*

School of Communication, Ariel University, Ariel, Israel

(Received 13 July 2013; accepted 24 October 2014)

This study examines the digital divide between the Jewish majority and Arab minority in Israeli society as manifested by Internet access and patterns of use. The goals of this paper were to examine the digital divide between these two groups and to identify the factors that influence these gaps. The study is based on data from the Israel Central Bureau of Statistics Annual Social Survey, collected in 2011 through face-to-face interviews of 5872 interviewees aged 20–65 years. Jews were found to have an advantage over Arabs in terms of Internet access and in terms of the two types of uses: capital-enhancing and recreational. Our important conclusion is that, theoretically, with background variables being the same, the first-level digital divide between Jews and Arabs can be considered closed; in contrast, the second-level digital divide remains even if human resources in both groups are the same. This gives reason to assume that beyond the impact of human resources, the second-level digital divide between Jews and Arabs originated from their cultural background. Israeli Arabs are a unique minority indigenous group with two affinities – to Israeli modern society (because of citizenship) and to the Arab traditional world (because of their religious and cultural roots). Closing digital gaps requires changes in basic social, economic, and cultural aspects of the Arab sector on the individual level, i.e., personal motivation, as well as on the community level, including collective sociocultural preferences.

Keywords: digital divide; capital-enhancing uses; recreational uses; national minorities

1. Introduction

The emergence of the Internet as a worldwide web in the late 1990s made access to information and knowledge significantly easier. In this period, in which the number of computers connected to the Internet rose dramatically (Carey, 1996; Hargittai, 2010; Taipale, 2012; Tocatly, 2000), the modern digital revolution began. Internet penetration is on the increase in many countries. Soon after the Internet started reaching the masses, concerns about its unequal distribution appeared along with the issue of a digital gap (see, e.g., Comaine, 2001; Hoffman & Novak, 1998). The ability to use such technologies determines the difference between marginality and social inclusion. Those who are excluded from communication and information structures are also effectively excluded from political and cultural citizenship (Lash, 1994). Research in recent years has produced a number of arguments in favor of a progressive marginalization of access, and the one-dimensional concept of digital divide has been replaced by multidimensional concepts of digital inclusion.

*Email: sabinal@bezeqint.net

© 2014 AMIC/SCI-NTU
and digital inequalities which focus on how individuals interact with the Internet (Guerrieri & Bentivegna, 2011; Hargittai, 2004; Warschauer, 2003).

This study investigates digital access and digital uses in a unique Israeli context. The digital divide between Jews and Arabs in Israeli society is an interesting case in that it examines how the majority and the minority groups, which differ in economic, cultural, religious, and demographic terms and live in a cleft society, adopt, and use information and communication technologies. A study of digital uses among Israeli Arabs is also unique in that it presents the adoption of these technologies by a social group torn by two conflicting bonds: one to technological progress as citizens of a modern state and the other to the traditional world of their families with longstanding customs pertaining to religion, language, and culture.

The aim of the present study is to examine the gaps in Internet access and digital uses among and between Jews and Arabs in Israeli society and to identify the factors affecting these gaps.

1.1. Jews and Arabs in Israel

Israel is a multicultural society in which the Jewish population forms about 75% and the Arab population forms about 20% of the total population.

The Jewish majority is composed mostly of immigrants and sons and daughters of immigrants, and Israel is committed to the successful absorption of Jewish immigrants. By the Law of Return (1950) and the Law of Nationality (1952) every Jew has the right to settle in Israel, consequently, Jewish immigrants can be awarded Israeli citizenship on arrival.

The Arab minority was granted Israeli citizenship in 1948 (statehood), but until 1966 their rights were suspended in practice as they were under the rule of a military administration and were confined to specific geographic areas, a step that was justified as a security measure against a potentially hostile population. Thus their ability to travel in pursuit of educational and training opportunities and to compete for better jobs in the labor market was severely hampered. Although these formal restrictions on their mobility were relaxed after 1967, the fact that Arabs were denied the right of free movement for almost two decades may have had long-term effects on Jewish–Arab inequality (Okun & Friedlander, 2005). Since the abolition of the military administration (1966), Arab citizens have formally enjoyed civil and political rights on an individual, liberal basis, as long as these rights do not conflict with the national goals of the Jewish majority (Shafir & Peled, 2002). Arab citizens are not conscripted to the Israeli military because of the potential conflict they would face in any military operations against Arabs. This places their loyalty to the state in question and constitutes one reason for the ambiguous attitude toward the Arab population in Israeli society, in which military service is a supreme value.

Perhaps the greatest gaps between Jews and Arabs in Israel are economic and educational. In the Jewish sector, 54% of high school graduates are entitled to matriculation certificates each year, as compared to 44% of graduates in the Arab sector. In 2008, less than a fifth of all undergraduate students in Israeli universities and colleges were Arabs. In terms of socioeconomic status, about 80% of the Arab communities are ranked in the four lowest socioeconomic deciles of the Central Bureau of Statistics, and no Arab communities appear in the four upper deciles (Central Bureau of Statistics [CBS], 2011).
Arabs suffer discrimination in the labor market. Although no law or regulation specifically precludes Arabs from being employed in specific areas, in practice, they are strikingly underrepresented in many sectors, including government service and defense-related industries (Lewin-Epstein & Semyonov, 1993). Furthermore, while Israel has two official languages, Hebrew and Arabic, more prestigious positions usually require mother-tongue mastery of Hebrew, which at times serves as a barrier to the Arab minority for which Hebrew is a second language.

Thus the employment opportunities of Arabs are often limited to the public sector in local Arab areas, in fields such as education, health, and welfare (Al-Haj, 1995). The over-representation of Jews in higher-status occupations and in professional, scientific, and managerial positions is paralleled by the disproportionate number of Arabs, especially men, in skilled and unskilled manual occupations (Kraus & Yonay, 2000). Few Arabs work in the high-tech industry, the key economic growth engine in Israel; between 2000 and 2005, the share of Arabs in the high-tech employment market was approximately 4% (Abraham Fund, 2013).

Although the rate of participation in the labor force among Jewish and Arab men is almost the same, Arab women account for only one-third as many female workers as Jewish women. The average household income in the Jewish sector stands at NIS 12,842, compared to NIS 7,744 within the Arab sector (CBS, 2011).

In other words, the Arabs are disadvantaged compared with Jews in every aspect of social stratification, including education, occupational status, earnings, and standard of living (Lewin-Epstein & Semyonov, 1993). These disadvantages can be attributed largely to socioeconomic discrimination and should be understood within the context of the Jewish–Arab conflict (e.g., Lewin-Epstein & Semyonov, 1993).

However, the two sectors are also divided by cultural differences. In Jewish society, secular and traditional elements are perceived as much more modern and supportive of individual enterprise than the more conservative Arab society. This may change in the future as traditional Arab society, especially in urban areas, undergoes a process of flux and transformation into a modern society (Ganayem, Rafaeli, & Azaiza, 2009).

The status of women in Arab society is still inferior to that of men, but part of the modernization process includes the development of a more educated stratum of Arabs – men and women – that is dissatisfied with the prevailing situation and perceives traditions and customs as an important root of the gender gap in Arab society (Ali, 2006).

Israeli Jews and Arabs very rarely meet socially, and the two populations live in nearly complete geographic isolation, with an almost fully self-segregated school system. Indeed, 65% of Arab youth report having no Jewish friends on online social networks (Ganaem, Asaad, & Tibi, 2011). When they do learn about one another through the mass media, the framing is often one of conflict and of violence (Aburaiya, Avraham, & Wolfsfeld, 1998; Ashuri, 2010; Wolfsfeld, 1997). Recent opinion polls demonstrate hostility, which is expressed, for example, in large percentages of Arab respondents claiming that they would not have a Jewish friend (29% in 2009) or a Jewish neighbor (43% in 2009), or Jewish respondents claiming that they would not have an Arab neighbor (51% in 2009) or an Arab supervisor at work (58% in 2009), and avoid entering into Arab residential areas (66%) (Hermann, Atmor, Heller, & Lebel, 2012; see also Abraham Fund, 2013). The socioeconomic, cultural, and religious differences between the two groups are likely to have an effect on patterns of Internet use.
1.2. The digital inequality

A digital divide is created between those who have access to information and communication technologies and know how to utilize them, and those who do not (Compaine, 2001). Today, it is customary to separate the digital divide into two levels of inequality: the first distinguishes between those who are connected and those who are not. The second characterizes the surfing patterns of those connected to the Internet, including measurements of different types of Internet uses (DiMaggio & Hargittai, 2001; Hargittai, 2003).

As investment in the Internet infrastructure increases, so does the issue of digital access. Van Dijk (2005) has demonstrated that in terms of physical access to computers and the Internet, the digital divide is closing in developed countries. Researchers of digital divide suggest that we should be looking more at inequality in terms of different types of usage than at inequality in access to the Internet or, in other words, we should focus on the ‘second-level digital divide’ (Jin & Cheng, 2008; van Deursen & van Dijk, 2014).

Some Internet usage activities are more beneficial or advantageous for users – offering them greater opportunities and resources for advancing their careers, work, education, and social status – than others intended for momentary consumption or entertainment (e.g., DiMaggio, Hargittai, Celeste, & Shafer, 2004; Hargittai & Hinnant, 2008; Kim & Kim, 2001; Mossberger, Tolbert, & Stansbury, 2003; van Dijk, 2005; Zillien & Hargittai, 2009). Accordingly, the research literature differentiates between digital uses that assist individual mobility and contribute to closing economic and social strata gaps and uses that are less connected to these gaps (DiMaggio & Hargittai, 2001; Hargittai & Hinnant, 2008). The first group includes capital-enhancing uses, which refer to Internet surfing for beneficial purposes, including seeking health information, researching products, purchasing products, and banking online (Hargittai & Hinnant, 2008; Hassani, 2006). Such usage would also enhance political participation and career advancement (Bakker & de Vreese, 2011; Rahim, Pawanteh, & Salman, 2011). In terms of the capital and resources theory, inspired by Bourdieu (1984), one could also say that such users build economic, social, and cultural capital and resources.

The second type is recreational activities, i.e., browsing for fun, playing games, messaging, downloading music, or gambling online (Hargittai, 2010; Howard, Rainie, & Jones, 2001; Jones & Fox, 2009). Most researchers agree that capital-enhancing uses are more likely to promote beneficial consequences, i.e., they are more likely to increase the user’s political knowledge, participation, life chances, and social inclusion (Clark, 2003; Hargittai & Hinnant, 2008; Rahim et al., 2011; Warschauer, 2003). Nevertheless, some researchers have argued that recreational use of the Internet may have beneficial consequences (Livingstone & Helsper, 2007; Sandvig, 2001). For example, the social media, which in this research are associated with recreational uses (see Methodology section), create a platform for communications among a dynamic consortium of people utilizing social network sites, forums, discussion groups, and blogs in a manner that enables individuals with a common interest to interact continually and to promote different types of benefits (Boyd & Ellison, 2007; Bradley, 2006; Haenlein & Kaplan, 2010).

The narrowing of the access divide and the emergence of a ‘second-level digital divide’ have made SES a weaker predictor of material access and a stronger antecedent to use patterns (Wei & Hindman, 2011). Those groups with higher income and education tend more toward capital-enhancing uses, while those with lower education and income levels tend more toward recreational uses (Hargittai & Hinnant, 2008; Howard et al., 2001; Madden, 2003). Moreover, Helsper and Galacz (2009) found that those with a lower level of education are less likely to use the Internet for capital-enhancing purposes,
even when their levels of Internet access and skills are similar to those with more education. In the Netherlands, a country in which access gaps have been virtually eradicated, van Deursen and van Dijk (2014) found that although low-educated spend more time online, those with higher social status use the Internet in more beneficial ways.

1.3. **Digital divide between different population groups**

According to the research literature ethnicity is one of the main predictors of ICT adoption. Studies of the digital divide have shown that ethnic and national minority groups are less likely to use the Internet and that their access depends on income and educational levels. Hence, the digital divide apparently replicates existing inequalities (Dupagne & Salwen, 2005; Fairlie, 2007). In the USA, rates of Internet access and variety of uses among Afro-Americans and Hispanics are lower than among Whites and those from Asiatic countries (Losh, 2010). Lower rates of Internet access among Afro-Americans and Hispanics are connected to their lower socioeconomic status (Greenstein & Prince, 2006). However, when controlling for education, ethnic differences disappear – college graduates in all these groups had similar Internet access rates (Fox & Livingston, 2007). Israeli studies have indicated higher access rates in the Jewish sector as compared to the minority Arab sector (Avidar, 2009; Lev-On & Lissitsa, 2010; Lissitsa & Lev-On, 2014).

Studies indicate that the same variables that are responsible for creating gaps in Internet access also explain differences in digital uses (DiMaggio & Hargittai, 2001; van Deursen & van Dijk, 2011). These include demographic variables: gender (Losh, 2010; Taipale, 2012; Valkenburg & Peter, 2007; Zillien & Hargittai, 2009), age (Darnton, 2006; Hargittai, 2002; Losh 2010), level of religiosity (Campbell, 2005a, 2005b; Ess, Kawabata, & Kurosaki, 2007; Lev-On & Neriya-Ben Shahar, 2012), area of domicile (LaRose, Gregg, Strover, Straubhaar, Carpenter, 2007) and socioeconomic and human capital variables: education ( DiMaggio & Bonikowski, 2008; DiMaggio et al., 2004), income (Hargittai & Hinnant, 2008; Losh, 2010; Mesch & Talmud, 2011), and language proficiency (Fairlie, 2007; Lissitsa & Chachashvili-Bolotin, 2014; Qian & Lichter, 2007).

Studies conducted in Israel indicate a digital divide between Jews and Arabs, which is evident in both Internet access and Internet uses (Ganayem et al., 2009; Lev-On & Lissitsa, 2010; Lissitsa & Lev-On, 2014; Mesch & Talmud, 2011). This digital divide reflects cultural differences between the modern Jewish sector and the traditional and conservative Arab society as well as stratification gaps between these populations, which disappear when controlling for education, income, and occupational status (Mesch & Talmud, 2011).

**Research Questions:**

The present study examined the following questions:

1. How large is the digital divide in Israeli society between Jews and Arabs?
2. Which variables predict the digital divide between these groups?

2. **Method**

2.1. **Source of data**

Study data relied on the Annual Social Survey conducted by Israel’s Central Bureau of Statistics (CBS) in 2011. The CBS conducts a social survey annually using different respondents each year. CBS interviewers carried out face-to-face interviews in Hebrew, Russian, and Arabic.
2.2. Population and sample
The survey population comprises the permanent noninstitutionalized population of Israel aged 20 and older. The CBS sample consisted of 7500 individuals aged 20 and older, representing about 4.5 million people in that age bracket. The response rate was around 80%.

From this sample only Jews and Arabs of working age were filtered (20–65 years old). The filtered sample included 5972 respondents aged 20–65: 4858 Jews and 1014 Arabs.

2.3. Variables
2.3.1. Independent variables
Background variables: nationality, gender, age, religiosity, and area of residence.
Socio-economic and human capital variables: years of schooling, income, Hebrew, and English proficiency.

2.3.2. Dependent variables
Access to Internet was measured by the following item: During the last three months, have you made use of the Internet, including email?
Internet uses were measured by the following items: Did you use a computer during the last three months for: searching for information; email; discussion groups and communications; games; paying bills; downloading files; and buying products.
In each item, users were coded as 1 and nonusers as 0.

3. Data analysis
First, the basic findings regarding Internet access and uses among Jews and Arabs will be presented. Afterward, the gaps in access and in uses will be explained, based on background and SES variables.

3.1. Description of the digital divide in terms of Internet access and digital uses
Table 1 presents Internet access and digital uses among Jews and Arabs.

As can be seen in Table 1, rates of Internet access were higher among Jews, compared to Arabs. The most widespread Internet uses among the population as a whole were seeking information and using electronic mail. The least common uses were online purchases and paying bills. Jews had an advantage in all digital uses, compared to Arabs. The highest differences between the two groups were found in searching for information (79% of the Jews used the Internet for seeking information, compared to 46% of the Arabs) and social media (52% and 23%, respectively) —the uses that have the potential for increasing users’ economic, cultural, and social capital in Bourdieu’s (1984) terms. The narrowest digital gap was found in gaming (32% among Jews compared to 24% among Arabs).

3.2. Building measures for online uses
In order to examine whether general categories can be identified within the seven Internet uses presented earlier, a principal component factor analysis was performed with varimax rotation. The factors obtained in the analysis with factor loadings for the items and reliability coefficients are presented in Table 2.
Table 1. Percentage of Internet access and Internet uses by nationality, $\chi^2$ results.

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>Jews</th>
<th>Arabs</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet access</td>
<td>77.5%</td>
<td>83%</td>
<td>53%</td>
<td>427.7</td>
</tr>
<tr>
<td>Internet uses (descending order by total sample)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To search for information</td>
<td>73.4%</td>
<td>79.1%</td>
<td>46.3%</td>
<td>463.4</td>
</tr>
<tr>
<td>For e-mails</td>
<td>68.3%</td>
<td>74.6%</td>
<td>37.9%</td>
<td>523</td>
</tr>
<tr>
<td>For downloads</td>
<td>50.4%</td>
<td>53.4%</td>
<td>36.1%</td>
<td>100.7</td>
</tr>
<tr>
<td>For discussion groups</td>
<td>47.2%</td>
<td>52.3%</td>
<td>23.0%</td>
<td>289.1</td>
</tr>
<tr>
<td>For shopping</td>
<td>31.3%</td>
<td>35.4%</td>
<td>11.6%</td>
<td>221</td>
</tr>
<tr>
<td>For games</td>
<td>30.4%</td>
<td>31.8%</td>
<td>23.6%</td>
<td>26.9</td>
</tr>
<tr>
<td>To pay bills</td>
<td>28.6%</td>
<td>32.3%</td>
<td>10.7%</td>
<td>193.2</td>
</tr>
</tbody>
</table>

From Table 2 it can be seen that the analysis yielded two factors. The first factor, which included paying bills, online shopping, sending and receiving email, and searching for information, explained 29% of the variance. This factor represented capital-enhancing Internet uses. The second factor, which included games, participating in discussion groups, and downloading content, explained 16% of the variance. This factor represented recreational Internet uses. It should be noted that these content worlds correlate to the classification of digital uses in the research literature (Hargittai & Hinnant, 2008; Hassani, 2006; Howard et al., 2001; Hargittai, 2010).

All the loadings were above 0.40. The reliability coefficients for capital-enhancing uses (Cronbach’s alpha = 0.78) and recreational uses (Cronbach’s alpha = 0.63) made it possible to build measures for each of these two content worlds. The scale for measuring capital-enhancing uses ranged from 0 (does not employ any of the uses) to 4 (employs all four types of activities in Factor 1). The scale for recreational uses ranged from 0 (does not employ any of the uses) to 3 (employs all three types of activities in Factor 2). The respondents tended to a mean of two capital-enhancing uses (of the four examined) and one recreational use (of three). Findings from the independent samples t-test indicated a significant advantage for Jews, compared to Arabs, in capital-enhancing ($t (1; 5870) = 24.9$) and recreational uses ($t (1; 5870) = 14.7$).

Table 2. Factor analysis findings.

<table>
<thead>
<tr>
<th>Factor loadings</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Capital-enhancing uses</td>
<td></td>
</tr>
<tr>
<td>Used computer to pay bills</td>
<td>0.77</td>
</tr>
<tr>
<td>Used computer for shopping</td>
<td>0.72</td>
</tr>
<tr>
<td>Used computer for e-mails</td>
<td>0.55</td>
</tr>
<tr>
<td>Used computer to search for information</td>
<td>0.42</td>
</tr>
<tr>
<td>2. Recreational uses</td>
<td></td>
</tr>
<tr>
<td>Used computer for games</td>
<td>0.77</td>
</tr>
<tr>
<td>Used computer for discussion groups</td>
<td>0.67</td>
</tr>
<tr>
<td>Used computer for downloads</td>
<td>0.60</td>
</tr>
</tbody>
</table>
3.3. Predicting Internet access

In order to predict Internet access, a logistic regression was performed in three stages according to the research model (see Table 4). In the first stage, the background variables gender, age, place of residence, and level of religiosity were tested. In the second stage, years of schooling, proficiency in Hebrew and English, and income were added. In the third stage, in order to evaluate intergroup differences controlling for background and SES variables, nationality was entered. In the fourth stage, the interactional effect between gender and nationality was added in order to identify whether patterns of gender effect on digital uses differ between Jews and Arabs.

As can be seen from Table 3, Model 1, the probability of surfing vs. not surfing the Internet in the preceding three months, was higher among females, compared to males (exp(b) = 0.74). The probability of access was found to be higher among the young (exp(b) = 0.95) and the secular (exp(b) = 2.22). No differences in the probability of surfing vs. not surfing the Internet were found between central and periphery residents (exp(b) = 1.15). The higher the years of schooling (exp(b) = 2.04), proficiency in Hebrew (exp(b) = 1.55), proficiency in English (exp(b) = 2.18), and income (exp(b) = 1.08), the higher was the probability of Internet usage (see Model 2). After controlling for background and SES variables (see model 3), probability of using the Internet among Arabs is about half that of Jews [exp(b) = 0.46] for the nationality variable. In this model, the advantage of females over males disappeared (exp(b) = 0.83). The effects of other sociodemographic variables in Model 3 were similar to those described in Model 2. In the fourth model, after entering the interactional effect between gender and nationality, the access gap between Jews and Arabs became insignificant (exp(b) = 0.73). In this model, the main effect of gender on Internet access was insignificant, i.e., no gender differences were evident in the Jewish sector (exp(b) = 0.95). However, the interactional effect was negative and significant (exp(b) = 0.49), i.e., Arab females have a significant advantage over Arab males in Internet access, after controlling for sociodemographic variables.

In studying quality measures of the model, it can be seen that the sociodemographic variables explained about 46% of the variance for the Internet access variable.

According to the findings, it can be concluded that a first-level digital divide between Jews and Arabs still exists, but after controlling for sociodemographic variables, this gap disappeared, in other words, the first-level digital divide between Jews and Arabs is a result of differences in human resources between these two sectors. The gender divide in Internet access has already been closed in the Jewish sector but still exists among Arabs. In addition, in keeping with the research literature (Bell, Reddy, & Rainie, 2004; Hargittai, 2010; Lev-On & Lissitsa, 2010; Mizrahi, Bar, Hezronov, & Oron, 2005), the digital divide based on age, religiosity, SES, and human capital variables still exists.

3.4. Predicting digital uses with sociodemographic variables

In order to predict the two types of digital use (capital-enhancing and recreational) among Internet users, two linear regressions were conducted in stages (see Tables 4 and 5). The independent variables were introduced to these models as in the logistic regression described above.

3.4.1. Capital-enhancing uses

Model 1 indicates that males are more likely to employ capital-enhancing uses, compared to females (β = 0.08). The tendency to capital-enhancing uses was found to be higher
Table 3. Logistic regression results for predicting Internet access.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Exp(b)</td>
<td>B</td>
<td>Exp(b)</td>
</tr>
<tr>
<td>Gender (male = 1)</td>
<td>-0.30**</td>
<td>0.74</td>
<td>-0.29**</td>
<td>0.75</td>
</tr>
<tr>
<td>Age</td>
<td>-0.06**</td>
<td>0.95</td>
<td>-0.05**</td>
<td>0.95</td>
</tr>
<tr>
<td>Area of residence (center = 1)</td>
<td>0.14</td>
<td>1.15</td>
<td>-0.16</td>
<td>0.85</td>
</tr>
<tr>
<td>Religiosity</td>
<td>0.80**</td>
<td>2.22</td>
<td>0.86**</td>
<td>2.37</td>
</tr>
<tr>
<td>Years of schooling</td>
<td></td>
<td></td>
<td>0.71**</td>
<td>2.04</td>
</tr>
<tr>
<td>Proficiency in Hebrew</td>
<td>0.44**</td>
<td>1.55</td>
<td>0.39**</td>
<td>1.48</td>
</tr>
<tr>
<td>Proficiency in English</td>
<td>0.78**</td>
<td>2.18</td>
<td>0.76**</td>
<td>2.14</td>
</tr>
<tr>
<td>Income</td>
<td>0.08**</td>
<td>1.08</td>
<td>0.08**</td>
<td>1.08</td>
</tr>
<tr>
<td>Nationality (Arabs = 1)</td>
<td></td>
<td></td>
<td></td>
<td>-0.78**</td>
</tr>
<tr>
<td>Interaction (Gender * Nationality)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.71</td>
<td>5.53</td>
<td>-4.44</td>
<td>0.01</td>
</tr>
<tr>
<td>Cox and Snell $R^2$</td>
<td>0.12</td>
<td>0.27</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>Nagelkerke $R^2$</td>
<td>0.20</td>
<td>0.44</td>
<td>0.45</td>
<td>0.46</td>
</tr>
</tbody>
</table>

**p < .01.
Table 4. Predicting capital-enhancing uses by sociodemographic variables, findings of linear regression analysis.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>B</td>
<td>β</td>
<td>B</td>
<td>β</td>
<td>B</td>
<td>β</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.20</td>
<td></td>
<td>0.29</td>
<td></td>
<td>0.50</td>
<td></td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Gender (male = 1)</td>
<td>0.17**</td>
<td>0.08</td>
<td>0.13**</td>
<td>0.06</td>
<td>0.15**</td>
<td>0.08</td>
<td>0.15**</td>
<td>0.08</td>
</tr>
<tr>
<td>Age</td>
<td>-0.01**</td>
<td>-0.08</td>
<td>-0.01**</td>
<td>-0.11</td>
<td>-0.01**</td>
<td>-0.13</td>
<td>-0.01**</td>
<td>-0.13</td>
</tr>
<tr>
<td>Area of residence (center = 1)</td>
<td>0.20**</td>
<td>0.10</td>
<td>0.05</td>
<td>0.03</td>
<td>0.01</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Religiosity</td>
<td>0.16**</td>
<td>0.15</td>
<td>0.12**</td>
<td>0.11</td>
<td>0.10**</td>
<td>0.10</td>
<td>0.10**</td>
<td>0.10</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>0.25**</td>
<td>0.23</td>
<td>0.25**</td>
<td>0.23</td>
<td>0.25**</td>
<td>0.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proficiency in Hebrew</td>
<td>0.12**</td>
<td>0.08</td>
<td>0.12**</td>
<td>0.08</td>
<td>0.12**</td>
<td>0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proficiency in English</td>
<td>0.35**</td>
<td>0.15</td>
<td>0.30**</td>
<td>0.13</td>
<td>0.30**</td>
<td>0.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>0.02**</td>
<td>0.17</td>
<td>0.02**</td>
<td>0.17</td>
<td>0.02**</td>
<td>0.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nationality (Arabs =1)</td>
<td></td>
<td></td>
<td>-0.44**</td>
<td>-0.14</td>
<td></td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Interaction (Gender * Nationality)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.05</td>
<td>0.22</td>
<td>.024</td>
<td></td>
<td>0.24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01.
Table 5. Predicting recreational uses by sociodemographic variables, findings of linear regression analysis.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>B</td>
<td>β</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.05</td>
<td>2.72</td>
<td>2.82</td>
<td>2.82</td>
</tr>
<tr>
<td>Gender (male = 1)</td>
<td>0.14**</td>
<td>0.07</td>
<td>0.13**</td>
<td>0.06</td>
</tr>
<tr>
<td>Age</td>
<td>−0.03**</td>
<td>−0.30</td>
<td>−0.03**</td>
<td>−0.31</td>
</tr>
<tr>
<td>Area of residence (center = 1)</td>
<td>−0.07*</td>
<td>−0.03</td>
<td>−0.07*</td>
<td>−0.04</td>
</tr>
<tr>
<td>Religiosity</td>
<td>0.18**</td>
<td>0.17</td>
<td>0.16**</td>
<td>0.15</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.01</td>
</tr>
<tr>
<td>Proficiency in Hebrew</td>
<td>−0.14**</td>
<td>−0.10</td>
<td>−0.14**</td>
<td>−0.10</td>
</tr>
<tr>
<td>Proficiency in English</td>
<td>0.17**</td>
<td>0.08</td>
<td>0.14**</td>
<td>0.06</td>
</tr>
<tr>
<td>Income</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Nationality (Arabs = 1)</td>
<td>0.14**</td>
<td>−0.23**</td>
<td>−0.18**</td>
<td>−0.07</td>
</tr>
<tr>
<td>Interaction (Gender*Nationality)</td>
<td>0.11</td>
<td>0.12</td>
<td>0.13</td>
<td>0.13</td>
</tr>
</tbody>
</table>

**p < .01.
among young ($\beta = -0.08$) and secular ($\beta = 0.15$). Residents of the center tend to capital-
enhancing uses more than periphery residents ($\beta = 0.10$).

After controlling for Hebrew and English language proficiency, education, and income (see Model 2), the effects of age slightly increased ($\beta = -0.11$), the effects of gender ($\beta = 0.06$), and religiosity ($\beta = 0.11$) diminished slightly and the effect of locality became insignificant ($\beta = 0.03$). The higher the years of schooling ($\beta = 0.23$), proficiency in Hebrew ($\beta = 0.08$), proficiency in English ($\beta = 0.15$), and income ($\beta = 0.17$), the higher were the capital-enhancing uses.

As can be seen in Model 3, Jews had the advantage over Arabs in capital-enhancing uses ($\beta = -0.14$), after controlling for sociodemographic variables. The effects of the sociodemographic variables remained the same. According to our findings, the effect of education on capital-enhancing uses ($\beta = 0.23$) was higher than the effects of other sociodemographic variables.

After entering the interactional effect between gender and nationality (see Model 4) the gap in capital-enhancing uses between Jews and Arabs remained ($\beta = -0.14$). The interactional effect between gender and nationality (see Model 4) was insignificant, i.e., among Internet users patterns of gender differences in capital-enhancing uses are similar between Jews and Arabs. Model fit was about 24%. It should be noted that model fit rose dramatically (from 0.05 to 0.22) in Model 2 after entering human capital and SES variables. It is important to note that the $R^2$ in the sample of Internet users was only about 24% (compared to 46% for predicting Internet use). This may be a result of a self-
selection process among Internet adopters compared to the general population. In other words, the main selection on the basis of sociodemographic characteristics occurs in the first-level digital divide, whereas among Internet users, the distinguishing ability of these characteristics is much lower.

3.4.2. Recreational uses

Model 1 indicates that males are more likely to engage in recreational uses, compared to females ($\beta = 0.07$). The tendency to recreational uses was found to be higher among young ($\beta = -0.30$) and secular ($\beta = 0.17$). Periphery residents tend more to surf Internet for recreational purposes, compared to center residents ($\beta = -0.03$).

After controlling for human capital and SES variables (see Model 2), the effects of background variables remain the same. The effects of years of schooling and income on recreational uses were insignificant, whereas these variables had significant and relatively strong effects on capital-enhancing uses. This finding correlates with the research literature (Howard et al., 2001; Madden, 2003).

As for the impact of language proficiency, the higher the English proficiency ($\beta = 0.08$) and the lower the Hebrew proficiency ($\beta = -0.10$), the higher were recreational uses. English and mother tongue are often sufficient for recreational uses: English is useful for downloading and online games, mother tongue is usually employed for correspondence in forums, social networks, and discussion groups with members of the same sector; therefore, Hebrew proficiency is not necessary for these uses. The fact that Hebrew proficiency does not have a positive impact on recreational uses can indicate a lack of interactions between Jews and Arabs in the social media framework. In addition, a negative effect can indicate that better proficiency in Hebrew allows individuals to spend their leisure time in more beneficial ways.
As can be seen in Model 3, Jews had the advantage over Arabs in recreational uses ($\beta = -0.07$), when controlling for sociodemographic variables. The interactional effect between gender and nationality (see Model 4) was insignificant, i.e., among Internet users patterns of gender differences are similar between Jews and Arabs. The effects of other sociodemographic variables on recreational uses after entering the interactional effect remained the same. According to our findings, the effect of age on recreational uses ($\beta = -0.32$) was higher than the effects of other sociodemographic variables. This finding correlates with the research literature (Brandtzæg, Heim & Karahasanović, 2011).

In addition, sociodemographic variables explained recreational uses (Model fit = 0.13) less than capital-enhancing uses (Model fit = 0.24).

4. Discussion

This study focused on two national groups within Israeli society: Jews and Arabs. As can be seen in the literature review, over the years Jews have maintained a prominent advantage over Arabs in terms of education and socioeconomic status. Effective use of the Internet represents an important human capital resource for citizens of a modern state, one that can serve minority groups as a channel for social mobility if the required skills are acquired. However, if a digital divide between members of the dominant culture and the minority culture persists, the Internet may function to reinforce inequalities of power and knowledge, creating more profound gaps between the groups (Castells, 2002; Norris, 2001; Witte & Mannon, 2010).

The current study examined two levels of the digital divide: access to the Internet and the so-called ‘second-level’ digital divide, i.e., differences in digital uses. In keeping with the research literature (Avidar, 2009; Lev-On & Lissitsa, 2010), our findings indicate that Jews in Israel have an advantage in digital access, compared to Arabs. However, this advantage disappeared after controlling for sociodemographic variables. Thus, the first-level digital divide between Jews and Arabs originated from differences in human resources between these two groups.

However, entering cyberspace is only the first step of digital inclusion. Which content to use and how to utilize the power of the Internet are more important questions. As was the case in studies from elsewhere in the world (DiMaggio & Hargittai, 2001; Hargittai, 2010; Hargittai & Hinnant, 2008; Hassani, 2006; Howard et al., 2001), two main types of digital uses were found in Israeli society: capital-enhancing (email, seeking information, purchasing, and paying) and recreational (games, social media, and downloading content). Salient differences between groups were found in both types of uses, with Jews tending to use the Internet for these purposes more than Arabs.

According to our findings among Internet users, after controlling for sociodemographic variables, Jews still have a significant advantage over Arabs in capital-enhancing and recreational uses. Therefore, the second-level digital divide between Jews and Arabs does not derive only from differences between the resources of the groups but also apparently can be explained by the sociocultural context as well. These usage gaps between Jews and Arabs reflect cultural differences between the mostly modern and secular Jewish sector and the more traditional and conservative Arab society (Mesch & Talmud, 2011). The late introduction and ineffective use of the Internet in the Arab sector may be attributable to cultural factors that link Israeli Arabs with the traditional Muslim
world. In the Arab world, the Internet is perceived as a disruptive influence to tradition, extreme religious instruction, and the prevailing patriarchal orientation (Bunt, 2007; Dahlberg, 2007; Loch, Straub, & Kamel, 2003) by making more modern views of liberalism, secularism, and feminism, among other issues, accessible. From an early age, young people in Arab society are aware of their real-life social networks and of their own position within them. They learn traditional networking and respect those who are adept at it (Weir & Hutchings, 2005). Moreover, participation in family and religious networks is not optional; it is mandatory, and it is unquestioned. This explains why the emergence of ‘virtual communities’ has generated consternation among conservative circles (Warf & Vincent, 2007), on the one hand, and incredulity, on the other hand, among those who perceive Arab culture as offering easily accessible, useful, and successful alternatives as the prevailing default mode.

Finally, it is important to mention the limitations of this study, which derive from the limitations of the CBS social survey database. Based on how the CBS formulated some of the dependent variables in its social surveys, it is not possible to discern whether uses were dedicated exclusively to serving capital-enhancing or recreational needs. For example, emails could be used for both types of needs. Similarly, the question about downloading content from the Internet included details that could serve both uses: it is possible to download programs for capital-enhancing needs or music and pictures for entertainment and pleasure. The use of social media can also serve both needs. In our study, the social media factor was assigned to recreational uses in the factor analysis, although in the literature such uses also constitute part of social capital that can promote social mobility (Ellison, Steinfield, & Lampe, 2007). In future studies, formulations should be used that make it possible to unequivocally attribute digital uses to one of these two worlds of content.

An additional limitation of our cross-sectional study is the fact that we used income only as an independent variable. In future studies, it would be better to use a longitudinal study similar to the research model employed by DiMaggio and Bonikowski (2008): in the first stage, examining the effect of income on Internet access and uses and after a given period of time, investigating the effect of digital uses on income. However, to date no large-scale longitudinal studies of this type have been conducted in Israel.

5. Conclusions

Our important conclusion is that, theoretically, with background variables being the same, the first-level digital divide between Jews and Arabs can be considered closed; in contrast, the second-level digital divide remains even if the human resources of both groups are the same. The results of the current investigation suggest that overcoming digital divides is a complex challenge that goes beyond improving access or Internet skills. Closing digital gaps requires changes in basic social, economic, and cultural aspects of the Arab sector on the individual level, i.e., personal motivation, as well as on the community level, including collective sociocultural preferences. The cultural change should be reflected in the disposition of individuals to ICT – appropriateness and perceived usefulness of the technology, willingness to engage in computer training, aspirations for leveraging skills. We also believe that the acceptance of Internet use by Arab religious and community authorities can facilitate its penetration among the more traditional and older segments of the Arab sector and promote change at the community level.
level. The key to this transformation may lie in emphasizing to the leaders how Internet use can enhance religious and traditional indoctrination. Similar phenomena occurred among ultra-orthodox Jews in Israel (Lev-On & Neriya-Ben Shahar, 2012).

According to our findings, English and Hebrew proficiency have a positive impact on capital-enhancing digital uses. Mastery of these languages facilitates mobility in Israel’s labor market and promotes access to more prestigious and better-paying jobs (Ben-David, 2014). We believe that better professional adjustment among minorities can be facilitated by combining intensive professional Hebrew and English learning with the acquisition of computer and digital literacy. Specifically, we recommend the development of learning programs that promote the acquisition of language abilities and of the relevant digital information, strategic, and communication skills required by the modern labor market. At the same time, it is important to continue efforts to increase the scope and quality of content materials that are published on Israeli public sites in Arabic.

We believe that these recommendations can contribute to a narrowing of the digital divide and that digital technology can serve as a mobility channel and catalyst that enable minority groups to attain greater social and economic equality and progress to a more equitable, just and prosperous society.

Notes on contributor
Dr. Sabina Lissitsa is a senior lecturer in the Communication School at Ariel University. She earned her Ph.D. from Tel-Aviv University in 2006, specializing in integration of FSU immigrants in Israeli society. Her research interests are: digital divide, immigrants’ integration, intercultural relations and leisure-time activities.

References


