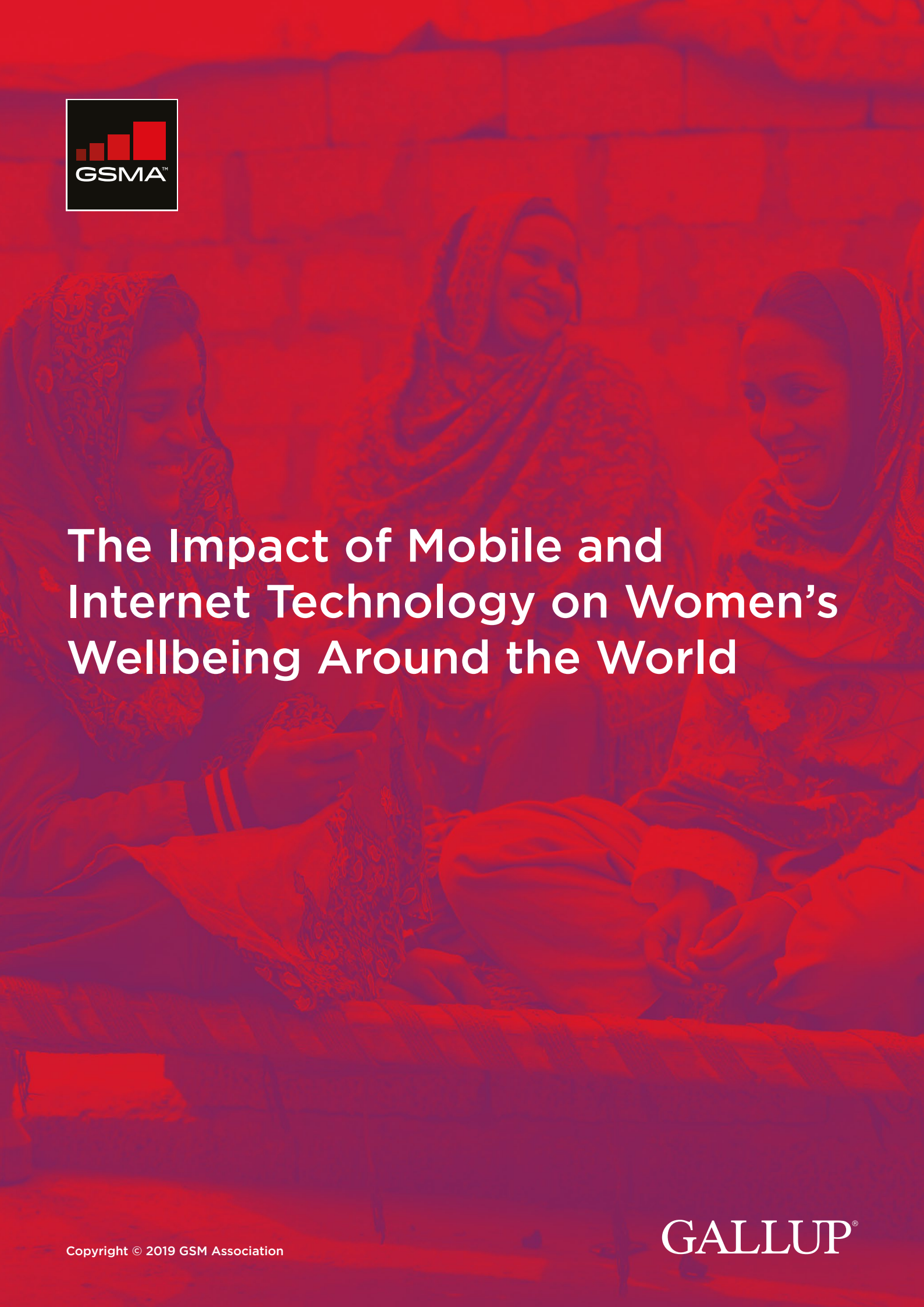

The Impact of Mobile and Internet Technology on Women's Wellbeing Around the World

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with almost 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

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Contents

Executive Summary

This report investigates for the first time the impact of mobile technologies on women and men's subjective wellbeing. It is part of the GSMA's ongoing commitment to assessing the impact of the mobile industry on social and economic development for people around the world. This study provides supplement to the seminal GSMA-Gallup report, *The Impact of Mobile on People's Happiness and Well-Being*,[1] released in 2018, leveraging primary data collected from 142 countries through the Gallup World Poll, in 2016. Through this analysis, the relationships between mobile phone ownership and internet technology use (or "connectivity status") on the one hand, and two types of subjective wellbeing (SWB) indicators on the other are examined: 1) people's evaluations of their own lives (Evaluative Wellbeing), and 2) the balance of positive vs. negative emotions they experience, known as 'affect balance' (Experiential Wellbeing).

Key Findings

- An opportunity exists to boost women's wellbeing across the developing world by bridging the mobile and internet gender gap.
- This new study shows that the increase in wellbeing that is associated with mobile ownership and internet access affects men and women equally, even when controlling for external factors such as levels of income and education.
- Previous findings show that mobile phone ownership supplemented with internet access is associated with an improvement in peoples' lives, as evidenced by increased life evaluations and net positive emotions.
- This analysis shows that for both men and women, there is a significant improvement in both types of wellbeing metrics associated with mobile ownership and internet access, in some regions accompanied by a smaller independent increase associated with mobile phone ownership.
- However, in much of the world, access to both mobile and internet technology is substantially lower among women than men. Among low-income countries, according to Gallup data, half of the women (50%) have neither mobile nor internet access, in comparison to one-third of men (34%). This corroborates GSMA data showing a 10% gender gap in mobile ownership and 23% gap in mobile internet access across low- and middle-income countries.
- This means that women are disproportionately missing out on the wellbeing benefits of connectivity compared to men and that by closing the mobile and internet gender gap, stakeholders have an opportunity to promote women's wellbeing at an individual level.

1 https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/01/The-Impact-of-Mobile-on-People%E2%80%99s-Happiness-and-Well-Being_report.pdf

Introduction

This analysis provides supplement to the initial GSMA-Gallup report, *The Impact of Mobile on People's Happiness and Well-Being*,[2] released in 2018, which examined the relationships among adults around the world between mobile and internet technology use (or "connectivity status") on the one hand, and two types of subjective wellbeing (SWB) indicators on the other: 1) people's evaluations of their own lives (Evaluative Wellbeing), and 2) the balance of positive vs. negative emotions they experience, known as 'affect balance' (Experiential Wellbeing). Overall, the data indicate the wellbeing gains associated with these technologies are similar among men and women; however, access to mobile phones and/or the internet remains uneven in much of the developing world.

As in the initial report, this gender supplement includes both descriptive results presenting wellbeing levels by connectivity status among women and men in different regions and country income levels, and a multivariate analysis that more closely examines the relationships between SWB indicators and use of mobile and internet technology while controlling for income and other potentially confounding factors.

Results from 142 countries surveyed for the Gallup World Poll in 2016 confirm previous GSMA research pointing to significant gender differences[3] in the adoption of mobile and internet technology in many of the world's low-income countries. Despite evidence of the positive impact generated from mobile ownership supplemented with internet access, leading to an improvement in people's lives – which holds equally true for women as well as men – there remains a gender discrepancy in the uptake and use of mobile technologies. These differences are troubling for their potential to put women at a further disadvantage in some countries where they are more vulnerable and have lower social status than men. Mobile phones can help women feel safer and more connected, and the ability to access the internet via mobile devices can empower them in many ways – for example, through financial inclusion, health information and educational content.

2 gsma.com/mobilefordevelopment/wp-content/uploads/2018/01/The-Impact-of-Mobile-on-People%E2%80%99s-Happiness-and-Well-Being_report.pdf

3 In this report, Gallup presents gender differences in mobile and internet access as the number of percentage points between the proportion of women and men who have access to these technologies.

PART 1

Descriptive analysis

The relationship between mobile/ internet use and wellbeing results among women and men worldwide

The initial GSMA-Gallup report examined the relationships between individuals' connectivity status and two types of SWB indicators: 1) people's numerical ratings of their own life quality (Evaluative Wellbeing), and 2) the balance of positive and negative emotions they experience, known as 'affect balance' (Experiential Wellbeing). The general conclusion when analysing the results by gender is the same as for the global population overall: among both men and women, there is a significant improvement in both types of wellbeing metrics associated with internet access, in some regions accompanied by a smaller independent increase associated with mobile phones.

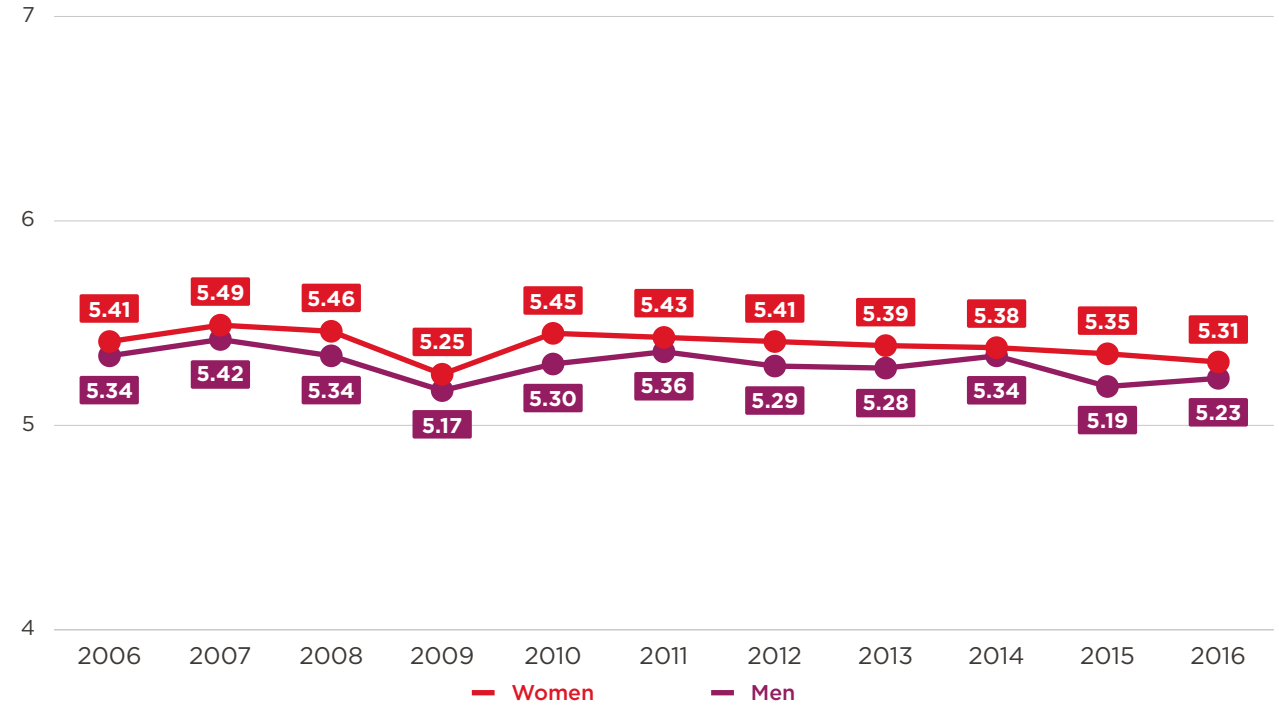
Internet access associated with a substantial boost in life ratings among both women and men

The life evaluation questions used on the Gallup World Poll are based on the Cantril Self-Anchoring Striving Scale, where zero represents the worst possible life respondents can imagine, and 10 represents the best possible life. Globally, average life evaluations among men and women are very similar and have been very stable among both genders over the past decade. In 2016, women asked to rate their lives on a 0-to-10 ladder scale where zero represented the worst possible life and 10 the best possible life gave an average rating of 5.31 – similar to the 5.23 average among men worldwide (Figure 1).

Figure 1

Life evaluation scores by men and women (2006–2016)

Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?



Source: Gallup World Poll

Descriptive analysis 4

There are substantial differences in life evaluations by region and development status; the average among residents of low-income countries in 2016 was 4.07, vs. 6.55 among residents of high-income countries (Table 1).

Table 1

Life evaluation trends by country income group, 2006–2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Low-Income Countries	4.01	4.42	4.16	4.15	4.05	4.31	4.28	4.16	4.11	4.20	4.07
Lower-Middle-Income Countries	5.08	5.06	4.99	4.83	5.01	4.83	4.81	4.69	4.72	4.60	4.62
Upper-Middle-Income Countries	5.05	5.25	5.27	5.06	5.20	5.43	5.48	5.55	5.59	5.55	5.52
High-Income Countries	6.77	6.82	6.72	6.57	6.67	6.7	6.58	6.66	6.61	6.54	6.55

Source: Gallup World Poll

However, averages among women and men in the same region or country income group are generally very similar; in no region do they diverge by more than a quarter of one scale point (Table 2). Further, where there are modest gender differences, average ratings tend to be higher among women than men. This finding is consistent with prior gender analyses of Gallup's life evaluation data (Graham and Chattopadhyay, 2013).

Table 2

Average life evaluations among women and men by global region, 2016

	Women	Men
Australia/New Zealand	7.36	7.12
U.S./Canada	6.96	6.74
Western Europe	6.61	6.68
Latin America	6.31	6.12
Eastern Europe	5.83	5.82
Post-Soviet Eurasia	5.40	5.42
East Asia	5.42	5.41
Southeast Asia	5.35	5.13
Middle East/North Africa	5.20	4.97
Sub-Saharan Africa	4.43	4.36
South Asia	4.35	4.38

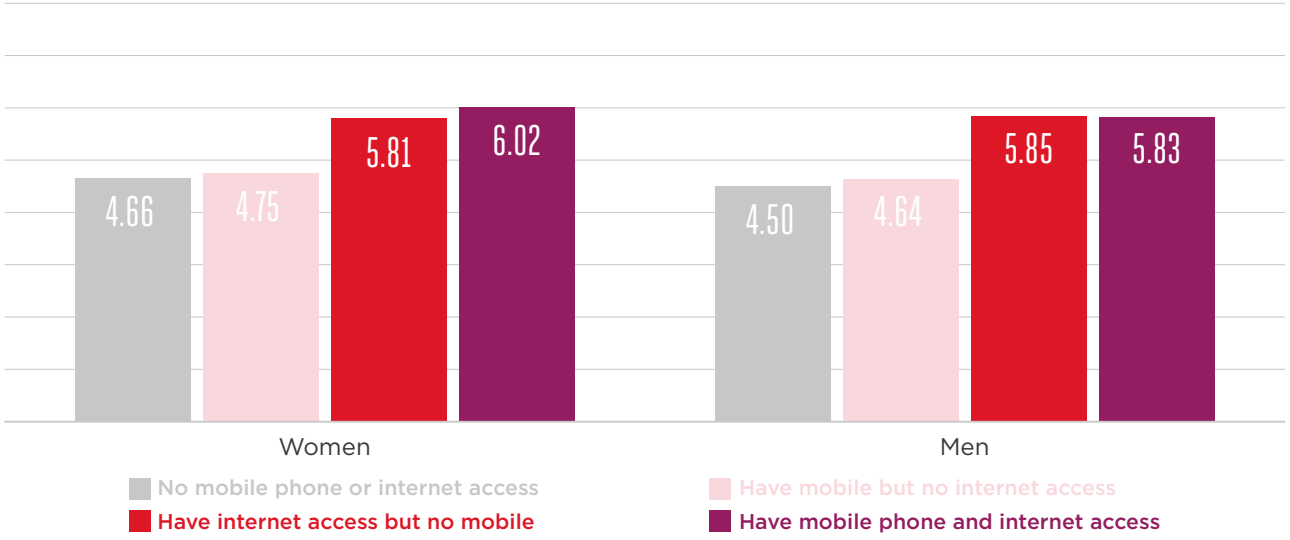
Source: Gallup World Poll

Among both men and women worldwide without internet access, average life ratings are marginally higher among those who have mobile phones than among those who do not. However, there is a much larger increase associated with internet access. In 2016, the average rating among women with internet access but no mobile was 5.81, with another modest increase to 6.02 among those who also have a mobile phone (Figure 2). By contrast, average ratings are well under five for both women and men without internet access. Such findings support the point made by GSMA's Connected Society Programme that "the internet is the most important enabler of social development and economic growth of our time."[4]

4 https://www.gsma.com/mobilefordevelopment/connected-society/

Figure 2

Average life ratings by connectivity status, men vs. women worldwide in 2016



Source: Gallup World Poll

Separating these results by country income group suggests that the life circumstances that prevail in countries at different development levels make a difference in how life ratings relate to mobile and internet use, especially among women. In both the low-income and high-income country groups, there are modest but significant life evaluation gains associated with mobile phone use, independent of internet access; for example, among women in low-income countries without internet access, those who have a mobile give an average rating of 4.12, while those without a mobile give an average of 3.87 (Table 3). In low-income countries where internet access is not the norm, women may be somewhat more likely than men to derive wellbeing gains from the more routine social contact enabled by mobile phone use; a 2001 meta-analysis of wellbeing studies among older people found that maintaining social networks had more impact on women's wellbeing levels compared to men's (Pinquart and Sörenson, 2001).

Table 3

Average life ratings by connectivity status among women and men, by country income group

	WOMEN				MEN			
	Have neither mobile nor internet	Have mobile but no internet	Have internet but no mobile	Have both mobile and internet	Have neither mobile nor internet	Have mobile but no internet	Have internet but no mobile	Have both mobile and internet
Low-Income Countries	3.87	4.12	4.52	4.83	3.78	3.92	4.58	4.58
Lower-Middle-Income Countries	4.53	4.41	5.00	5.26	4.24	4.35	5.06	5.18
Upper-Middle-Income Countries	5.24	5.07	5.80	5.86	5.44	5.01	6.11	5.69
High-Income Countries	5.72	6.18	6.48	6.75	5.62	5.88	6.56	6.65

Source: Gallup World Poll

Box 1

Key Findings Review

- Among both men and women, mobile phone ownership supplemented with internet access is associated with an improvement in individuals' lives, as evidenced by increases in average life evaluations:
  - Life Evaluation: 1.27-point increase for women and 1.19-point increase for men when mobile phone is supplemented with internet access.
- Among both men and women worldwide without internet access, average life ratings are marginally higher among those who have mobile phones than among those who do not.
- Average ratings are well under the 5-point marker for both women and men without internet access.
- In 2016, the average life rating among women with internet access but no mobile is 5.81, with another modest increase to 6.02 among those who also have a mobile phone.
- In both the low-income and high-income country groups, there are modest but significant life evaluation gains associated with mobile phone use, independent of internet access.

Affect balance highest among women with both mobile and internet access

Like life evaluations, affect balance scores differ little between women and men at the global level. The measure combines results from six individual World Poll questions regarding positive experiences (e.g., enjoyment, smiling and feeling respected) and negative experiences (e.g., sadness or worry) the respondent might have had the previous day. More specifically, the questions develop as follows:

Now, please think about yesterday, from the morning until the end of the day. Think about where you were, what you were doing, who you were with, and how you felt:

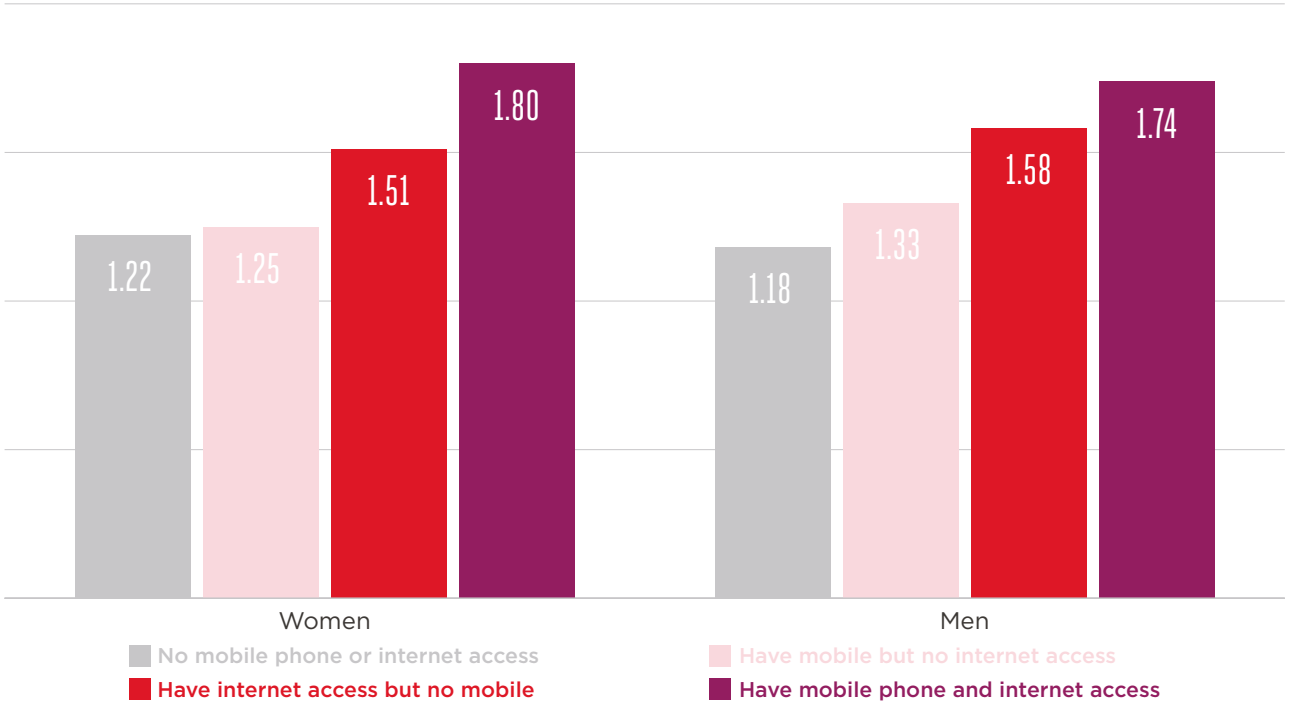
- *Did you smile or laugh a lot yesterday?*
- *Did you experience enjoyment during a lot of the day yesterday?*
- *Were you treated with respect all day yesterday?*
- *Did you experience worry during a lot of the day yesterday?*
- *Did you experience sadness during a lot of the day yesterday?*
- *Did you experience anger during a lot of the day yesterday?*

The composite score is simply the sum of positive experiences less the sum of negative experiences. In 2016, the average score among women worldwide was 1.50, almost identical to the 1.53 among men. Even more than with life evaluations, the lack of gender difference in affect balance is consistent across regions and country income groups.

At the global level, women's affect balance score changes little with mobile phone use in the absence of internet access. However, the score improves significantly with internet access and reaches 1.80 among women who use both mobile and internet technology (Figure 3). The pattern is similar among men, though with a more notable gain associated with having a mobile among those without internet access.

Figure 3

Affect balance by connectivity status, men vs. women worldwide in 2016



Source: Gallup World Poll

As with life evaluations, the relationship between women's average affect balance scores and their connectivity status varies somewhat by country income group. Notably, among women (and men) with no internet access in high-income countries, mobile ownership is associated with a somewhat lower affect balance score. However, these groups are relatively small within individual high-income countries, which may introduce some volatility in the results. The more consistent pattern is that women with internet access have higher affect balance scores (whether or not they have mobile phones) in the two lower-income country groups in comparison to men, while in the upper-middle and high-income groups affect balance is highest among those with both mobile and internet access for both genders (Table 4).

Table 4

Affect balance scores by connectivity status among women and men, by country income group

	WOMEN				MEN			
	Have neither mobile nor internet	Have mobile but no internet	Have internet but no mobile	Have both mobile and internet	Have neither mobile nor internet	Have mobile but no internet	Have internet but no mobile	Have both mobile and internet
Low-Income Countries	1.11	1.17	1.48	1.46	1.23	1.15	1.37	1.37
Lower-Middle-Income Countries	1.17	1.13	1.64	1.61	1.01	1.17	1.44	1.54
Upper-Middle-Income Countries	1.37	1.52	1.50	1.95	1.57	1.72	1.77	1.83
High-Income Countries	1.39	0.99	1.42	1.68	1.20	0.95	1.51	1.78

Source: Gallup World Poll

Box 2

Key Findings Review

- Among both men and women, mobile phone ownership supplemented with internet access is associated with an improvement in individuals' lives, as evidenced by increases in net positive emotions:
  - Affect Balance: 0.55-point increase for women and 0.41-point increase for men.
- At the global level, women's affect balance score changes little with mobile phone use in the absence of internet access.
- However, the score improves significantly with internet access and reaches 1.80 among women who use both mobile and internet technology.
- Women with internet access have higher affect balance scores (whether or not they have mobile phones) in the two lower-income country groups in comparison to men, while in the upper-middle- and high-income groups affect balance is highest among those with both mobile and internet access for both genders.

Women disproportionately missing out on the wellbeing benefits of connectivity compared to men: Half of the women in low-income countries have neither mobile nor internet, vs. one-third of men

Analysis of the Gallup data presented in this report corroborates analysis of GSMA data elsewhere,[5] that there is a gender gap in mobile ownership and internet access. This means that women are disproportionately missing out on the wellbeing benefits of connectivity compared to men: given the equal benefits for both women and men of mobile ownership and internet use, the fact that the rates of both are significantly lower for women in low-income markets means that fewer women are receiving the wellbeing benefits that connectivity can provide. There is therefore an opportunity for stakeholders to increase the wellbeing impact of connectivity by working to close the gender gap in mobile ownership and internet use.

Those gender differences seen in the Gallup data mostly involve access to the internet and mobile technology, rather than differences between men and women in the relationship between those technologies and wellbeing measures. The vast majority of individuals worldwide – 82% – say they have a mobile phone, with men (86%) somewhat more likely than women (79%) to have one. Half of the world's inhabitants (51%) have access to the internet, whether on a computer or mobile device, including 47% of women and 53% of men. As GSMA has previously documented,[6] internet users in the developing world overwhelmingly go online using mobile technology; Gallup's 2016 data indicates that worldwide, just 3% of adults say they have internet access but no mobile phone.

Combining mobile and internet access categories reveals that at the global level, women are more likely than men to say they have neither a mobile phone nor internet access – 18% vs. 11%, respectively (Table 5). Among low-income countries (as designated by the World Bank) that difference widens substantially, to half (50%) of women vs. one-third (34%) of men. In the upper-middle income and high-income groups, the difference narrows to three percentage points each.

Table 5

Mobile phone ownership and internet access among women and men, by country income level

	WOMEN			MEN		
	Have neither mobile nor internet	Have mobile but no internet	Have both mobile and internet	Have neither mobile nor internet	Have mobile but no internet	Have both mobile and internet
All countries	18%	34%	45%	11%	36%	50%
Low-Income Countries	50%	39%	10%	34%	45%	19%
Lower-Middle-Income Countries	28%	49%	21%	17%	52%	29%
Upper-Middle-Income Countries	10%	29%	58%	7%	29%	62%
High-Income Countries	6%	15%	75%	3%	14%	79%

Source: Gallup World Poll

Reflecting these differences in economic development, women's use of mobile and internet technology also varies widely by region (Table 6); in South Asia, 13% of women have both a mobile phone and internet access vs. 84% in Australia and New Zealand. The largest differences between women and men on this measure are seen in the Middle East/North Africa region (45% vs. 60%), South Asia (13% vs. 22%) and sub-Saharan Africa (18% vs. 27%).

5 GSMA 2018, "The Mobile Gender Gap Report 2018" and GSMA 2019, "The Mobile Gender Gap Report 2019".
6 gsma.com/newsroom/press-release/half-worlds-population-connected-mobile-internet-2020-according-gsma/

Table 6

Connectivity status by global region, 2016

	Have neither mobile nor internet access			Have both mobile and internet access		
	Women	Men	Difference	Women	Men	Difference
South Asia	32%	18%	14 pts.	13%	22%	-9 pts.
Sub-Saharan Africa	38%	26%	12 pts.	18%	27%	-9 pts.
Middle East/ North Africa	15%	5%	10 pts.	45%	60%	-15 pts.
Eastern Europe	10%	7%	3 pts.	67%	72%	-5 pts.
Southeast Asia	23%	18%	5 pts.	36%	40%	-4 pts.
Latin America	19%	15%	4 pts.	51%	55%	-4 pts.
Western Europe	5%	2%	3 pts.	72%	76%	-4 pts.
Post-Soviet Eurasia	9%	7%	2 pts.	63%	67%	-4 pts.
East Asia	8%	5%	3 pts.	62%	65%	-3 pts.
U.S./Canada	4%	3%	1 pt.	81%	83	-2 pts.
Australia/New Zealand	7%	4%	3 pts.	84%	84%	0 pts.

Source: Gallup World Poll

In some cases, regional gender differences are driven disproportionately by certain countries (Table 7). In South Asia, for example, Pakistan has by far the world's largest difference in mobile ownership (59 percentage points), followed by Afghanistan (31 points). By contrast, the mobile gender difference in India is relatively small with six percentage points. In some countries where mobile phones have become more prevalent – such as Egypt, Iraq, Azerbaijan and Guatemala – there remains a substantial gender difference in internet access.

Table 7

Largest country-level gender differences in mobile ownership and internet access, 2016

HAVE A MOBILE PHONE			
	Women	Men	Difference
Pakistan	27%	86%	59 pts.
Afghanistan	51%	82%	31 pts.
Benin	52%	77%	25 pts.
Burkina Faso	51%	74%	23 pts.
Bangladesh	58%	81%	22 pts.
Yemen	39%	61%	22 pts.
D. R. Congo	41%	62%	21 pts.
Mali	48%	69%	21 pts.
Chad	37%	55%	19 pts.
Ivory Coast	73%	91%	18 pts.
Ethiopia	32%	49%	18 pts.

HAVE INTERNET ACCESS			
	Women	Men	Difference
Egypt	23%	51%	28 pts.
Pakistan	4%	30%	26 pts.
Iraq	36%	60%	24 pts.
Nepal	16%	37%	22 pts.
Turkey	61%	79%	19 pts.
Yemen	9%	27%	18 pts.
Azerbaijan	49%	67%	18 pts.
Morocco	31%	49%	18 pts.
Ghana	14%	32%	18 pts.
Guatemala	28%	46%	18 pts.
Afghanistan	7%	24%	18 pts.

Source: Gallup World Poll

Social norms can influence technology use in a variety of ways. In some countries, for example, low educational attainment rates suppress internet use, as many residents are unable to read or lack basic familiarity with digital technology. The Gallup World Poll divides respondents into three standardised education categories, roughly corresponding to elementary education or less (0 to 8 years), secondary education (9 to 15 years) and postsecondary education (16 years or more). Women in traditionally patriarchal societies often have lower average education levels than men, helping account for some of the gender difference in Information and Communication Technologies (ICT) use.

In some cases, however, the gender difference persists in higher education levels. In South Asia, there is a more pronounced gender difference in internet access between women and men in the highest education group (39% vs. 57%, respectively) than in the middle group (22% vs. 34%). The difference closes altogether in the lowest group, in which only about 10% of men and women have access. Controlling for residents' education level in this way highlights the gender differences that are more directly attributable to other factors, such as social norms. Such effects vary by region, however; among adults with postsecondary education in the Middle East and North Africa, women are almost as likely as men to have internet access, while more substantial differences are seen in the middle and lower education groups. Complete regional results by education level can be found in Appendix 1.

Box 3

Key Findings Review

- Worldwide, the vast majority of individuals – 82% – say they have a mobile phone, with men (86%) somewhat more likely than women (79%) to have one.
- Half of the world's inhabitants (51%) have access to the internet, whether on a computer or mobile device, including 47% of women and 53% of men.
- At the global level, women are more likely than men to say they have neither a mobile phone nor internet access – 18% vs. 11% respectively.
- Among low-income countries (as designated by the World Bank), half of the women (50%) have neither mobile nor internet in comparison to one-third of men (34%).
- The combination of owning a mobile phone and having internet access varies widely by region between men and women; the largest differences between women and men on this measure are seen in the Middle East/North Africa region (45% vs. 60%), South Asia (13% vs. 22%) and sub-Saharan Africa (18% vs. 27%) respectively.

PART 2

Multivariate analysis

Does connectivity have a different impact on men and women?

In this section, we conduct a statistical test of gender differentials in the relationship between connectivity and subjective wellbeing to control for the effects of external factors such as income, health, education or marital status. This analysis represents an extension of the multivariate analyses conducted for the Technical Report *The Impact of Mobile on People's Happiness and Well-Being*, based on the same wave of World Poll data (2016), and uses the same methodology, which is briefly summarised here.

To estimate an unbiased impact coefficient of mobile ownership on subjective wellbeing, the analysis follows recommendations from Ferrer-i-Carbonell & Frijters (2004) and Kristoffersen (2010), and estimates Subjective Wellbeing (SWB), including Life Evaluations (LE) and Affect Balance (AB), using an Ordinary Least Squares (OLS) regression approach:

$$SWB = \beta_0 + \alpha D + \beta M + \varepsilon$$

Where β_0 is a constant term, D is a vector of control variables with unknown coefficients β, and ε is the unexplained part of the model. Controls were included into three successively stringent nested models:

1 **Income + Demos:**
Including socio-economic and demographic factors:

- Log of annual per capita household income (PPP)
- Age & age squared
- Gender
- Marital status
- Urban or rural setting
- Educational attainment
- Number of children in the household
- Country

2 **Income + Demos + Needs:**
Adding universal human needs as operationalised by Tay & Diener (2011), including:

- Safety and security
  - Felt safe walking alone
  - Did not have money and/or property stolen during the past 12 months
  - Were not assaulted during the past 12 months
- Social support and love
  - Have others they can count on for help in an emergency
- Feeling respected
  - Felt they were treated with respect
- Mastery
  - Had the experience of learning something
- Self-direction and autonomy
  - Experienced freedom in life

3 **Income + Demos + Needs + WB:**
Adding Physical and Community Wellbeing, including:

- Physical Wellbeing
  - Health Problems
  - Feel Well-Rested
- Community Wellbeing
  - City: Quality Healthcare
  - Good place for immigrants
  - Satisfied with roads and highways

Full methodological details can be found in the GSMA Technical Report.[7] For the current analysis, the "gender" variable plays an expanded role and is used to disaggregate the data into "female" and "male" subsamples. The impact coefficient of mobile connectivity on subjective wellbeing is then calculated separately for each sample. Further formal tests of the differential impact of mobile connectivity by interacting gender and mobile connectivity as predictors of SWB are conducted on the full sample.

Table 1 (see Appendix 2) presents the full results of the gender analysis, including the impact coefficient of mobile coefficient for the female sample (column 1), the male sample (column 2), the total combined sample (column 3), and the interaction term between gender and mobile connectivity (column 4). Tables 2 and 3 disaggregate this analysis by World Bank income groups.

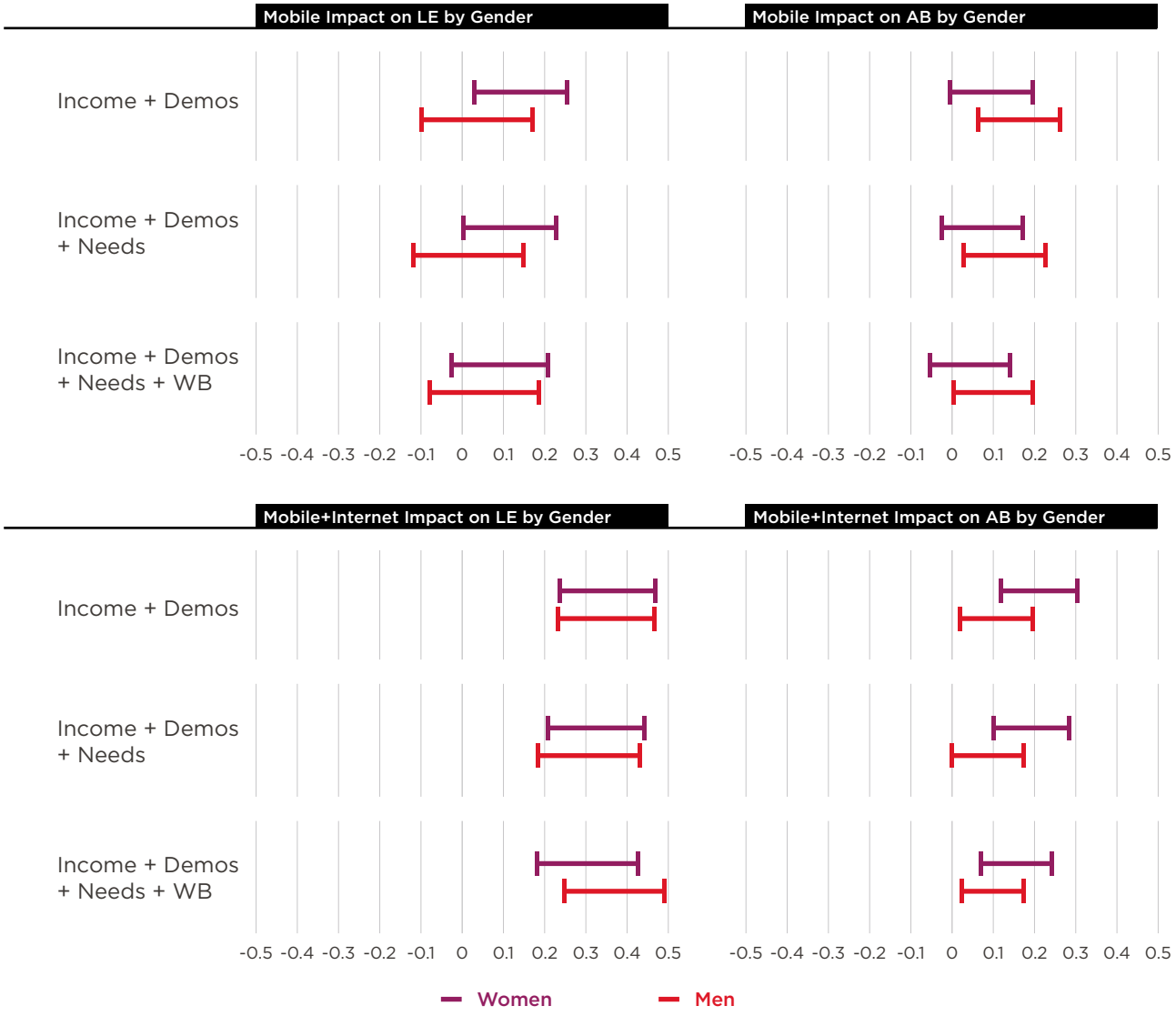
The results of the models, broken down for each of the two mobile connectivity variables, including mobile phone access alone, and mobile phone and internet access combined, show that:

- **Mobile phone access** has generally small effects on both Life Evaluation and Affect Balance, with few statistically significant differences in impact by gender.
  - **Life Evaluations:** Mobile phone access has a slightly higher impact on the life evaluations of females, particularly for the simpler "Income + Demos" model, where the impact for females (coef. = .145, p<.05) is significantly higher than for males (coef. = .036, p>.10). The impact of mobile access on Life Evaluation is particularly high among females in the higher income countries (see Table 2, in Appendix 2), which show the largest impact coefficients, ranging from .260 (p<.05) to .440 (p<.01).
  - **Affect Balance:** The impact of mobile phone access on Affect Balance is slightly higher for males than for females, although none of the gender-by-mobile interaction effects reach statistical significance (see Table 1, in Appendix 2). There are statistically significant gender differences in some country income groups though, with males showing significantly greater impact in lower-middle income countries (coef. ranging from .134 to .158, both p<.10, see Table 2, in Appendix 2), and females showing significantly greater impact in upper-middle income countries (coef. ranging from .158, p<.05 to .249, p<.01).
- **Mobile phone and internet access** shows greater impact than mobile phone access alone, particularly on Life Evaluation. Gender differentials are greater for Affect Balance than for Life Evaluations.
  - **Life Evaluations:** The combination of mobile phone and internet access shows a similarly strong impact on the life evaluations of males and females. There are some gender differences in lower-middle income countries (see Table 3, in Appendix 2), with a somewhat greater impact for males (coef. = .425 to .486, both p<.01) than females (coef. ranging from .267, p<.05, to .322, p<.01), although the gender by mobile interaction does not reach statistical significance.
  - **Affect Balance:** The combination of mobile phone and internet access shows a slightly higher impact on the affect balance of females, particularly driven by females in upper middle- and higher-income countries, which show the highest impact scores. Gender differentials are significant in upper-middle income countries, where the impact is greater for females (coef. ranging from .200, p<.01, to .297, p<.01) than for males (coef. ranging from .032 to .086, both p>.10).

7 https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/01/The-Impact-of-Mobile-on-People%E2%80%99s-Happiness-and-Well-Being_report.pdf

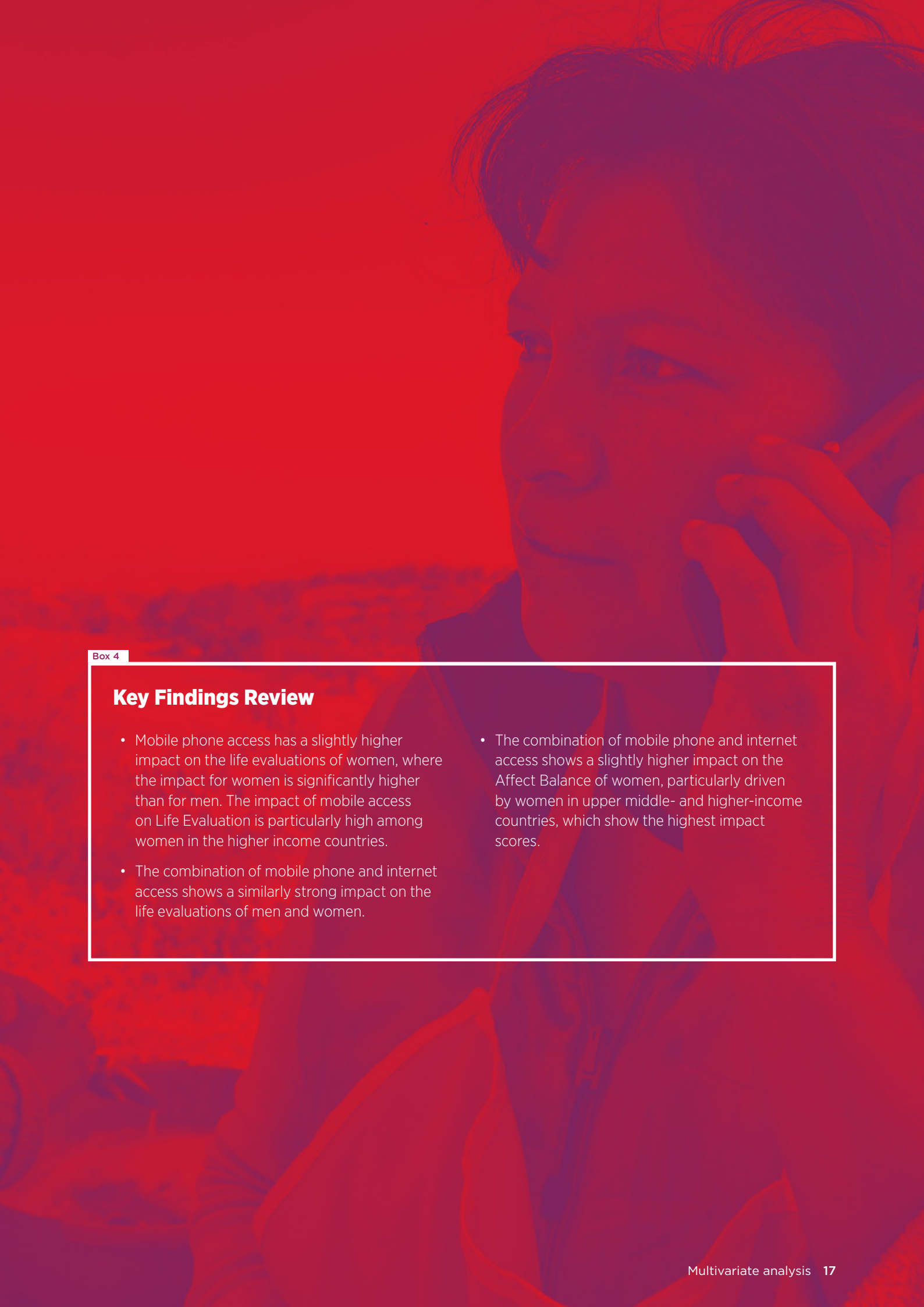
Figure 4

OLS coefficients for mobile and mobile + internet by gender



Source: Gallup World Poll

Bars represent the 95% confidence interval for the regression coefficient of Mobile Connectivity (Mobile Access or Mobile and Internet Access) on SWB (LE or AB).



Box 4

Key Findings Review

- Mobile phone access has a slightly higher impact on the life evaluations of women, where the impact for women is significantly higher than for men. The impact of mobile access on Life Evaluation is particularly high among women in the higher income countries.
- The combination of mobile phone and internet access shows a similarly strong impact on the life evaluations of men and women.
- The combination of mobile phone and internet access shows a slightly higher impact on the Affect Balance of women, particularly driven by women in upper middle- and higher-income countries, which show the highest impact scores.

Conclusions

The impact of mobile and internet connectivity on Subjective Wellbeing is similar for men and women although there are some statistically significant results suggesting a greater impact among women in specific areas. More specifically, mobile phone access has a somewhat higher impact among women's life evaluations, while the combination mobile and internet access has a greater impact among women's affect balance, particularly those in upper-middle income countries.

This effect holds even when controlling for external factors. Therefore, closing the gender gap presents an important opportunity to support women's wellbeing at an individual level.

Appendix 1

Regional results for mobile ownership and internet access by education level

The Gallup World Poll divides respondents into three standardised education categories:

- Elementary education or less (0 to 8 years formal education);
- Secondary education (9 to 15 years formal education); and
- Postsecondary education (16 or more years formal education).

Western Europe

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	81%	90%	9 pts.	Elementary	67%	79%	12 pts.
Secondary	90%	93%	3 pts.	Secondary	80%	81%	1 pt.
Postsecondary	93%	92%	0 pts.	Postsecondary	84%	82%	-3 pts.

Eastern Europe

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	71%	78%	7 pts.	Elementary	40%	46%	7 pts.
Secondary	93%	94%	1 pt.	Secondary	78%	78%	0 pts.
Postsecondary	99%	99%	0 pts.	Postsecondary	95%	95%	0 pts.

Post-Soviet Eurasia

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	74%	85%	11 pts.	Elementary	37%	55%	18 pts.
Secondary	91%	93%	2 pts.	Secondary	63%	67%	4 pts.
Postsecondary	98%	96%	-1 pt.	Postsecondary	88%	85%	-3 pts.

Middle East/North Africa

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	75%	88%	13 pts.	Elementary	24%	34%	10 pts.
Secondary	86%	95%	9 pts.	Secondary	63%	73%	10 pts.
Postsecondary	97%	98%	1 pt.	Postsecondary	87%	90%	3 pts.

Sub-Saharan Africa

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	50%	62%	11 pts.	Elementary	7%	12%	5 pts.
Secondary	75%	82%	7 pts.	Secondary	39%	47%	8 pts.
Postsecondary	92%	95%	2 pts.	Postsecondary	72%	76%	4 pts.

East Asia

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	87%	91%	5 pts.	Elementary	46%	48%	2 pts.
Secondary	93%	95%	2 pts.	Secondary	83%	86%	2 pts.
Postsecondary	97%	95%	-2 pts.	Postsecondary	96%	93%	-2 pts.

Southeast Asia

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	62%	70%	8 pts.	Elementary	14%	17%	3 pts.
Secondary	87%	88%	1 pt.	Secondary	57%	58%	1 pts.
Postsecondary	98%	97%	-1 pt.	Postsecondary	81%	84%	2 pts.

South Asia

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	63%	75%	12 pts.	Elementary	10%	11%	1 pts.
Secondary	71%	84%	13 pts.	Secondary	22%	34%	11 pts.
Postsecondary	89%	89%	0 pts.	Postsecondary	39%	57%	18 pts.

Australia/New Zealand

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	74%	66%	-8 pts.	Elementary	54%	64%	10 pts.
Secondary	86%	87%	1 pt.	Secondary	88%	92%	4 pts.
Postsecondary	95%	95%	0 pts.	Postsecondary	98%	98%	1 pt.

Latin America

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	59%	71%	11 pts.	Elementary	23%	28%	5 pts.
Secondary	85%	87%	2 pts.	Secondary	70%	72%	3 pts.
Postsecondary	97%	93%	-4 pts.	Postsecondary	92%	88%	-4 pts.

U.S./Canada

	HAVE A MOBILE PHONE				HAVE INTERNET ACCESS		
	Women	Men	Difference		Women	Men	Difference
Elementary	*	*	*	Elementary	*	*	*
Secondary	88%	94%	5 pts.	Secondary	86%	86%	0 pts.
Postsecondary	96%	95%	-1 pt.	Postsecondary	96%	97%	0 pts.

* Not enough cases to report results.

Source: Gallup World Poll

Appendix 2

Full results of multivariate gender analysis

Table 1

OLS coefficients for mobile and mobile + internet by gender

	1	2	3	4
Mobile	**Female**	**Male**	**Total**	**Female × Mobile**
Life Evaluation				
Income + Demos	0.145**	0.0357	0.0989**	0.124*
	(0.0573)	(0.0681)	(0.0481)	(0.0745)
Income + Demos + Needs	0.115**	0.0142	0.0691	0.105
	(0.0577)	(0.0678)	(0.0477)	(0.0762)
Income + Demos + Needs + WB	0.0928	0.0537	0.0766	0.0669
	(0.0597)	(0.0680)	(0.0482)	(0.0761)
Affect Balance				
Income + Demos	0.0947**	0.161***	0.116***	-0.0453
	(0.0444)	(0.0508)	(0.0359)	(0.0564)
Income + Demos + Needs	0.0731	0.128**	0.0881**	-0.0412
	(0.0453)	(0.0510)	(0.0361)	(0.0575)
Income + Demos + Needs + WB	0.0445	0.101**	0.0604*	-0.0658
	(0.0471)	(0.0491)	(0.0363)	(0.0566)
Mobile+Internet				
Life Evaluation				
Income + Demos	0.354***	0.351***	0.350***	0.0417
	(0.0586)	(0.0595)	(0.0464)	(0.0583)
Income + Demos + Needs	0.327***	0.308***	0.313***	0.0315
	(0.0598)	(0.0636)	(0.0485)	(0.0617)
Income + Demos + Needs + WB	0.306***	0.370***	0.339***	-0.00738
	(0.0620)	(0.0616)	(0.0502)	(0.0552)
Affect Balance				
Income + Demos	0.209***	0.107**	0.153***	0.0831*
	(0.0467)	(0.0450)	(0.0351)	(0.0434)
Income + Demos + Needs	0.194***	0.0857*	0.133***	0.0748*
	(0.0474)	(0.0443)	(0.0350)	(0.0436)
Income + Demos + Needs + WB	0.155***	0.0972**	0.122***	0.0183
	(0.0437)	(0.0380)	(0.0305)	(0.0414)

*** p<.01, ** p<.05, * p<.10, (Design-adjusted standard errors in parenthesis)

Source: Gallup World Poll

Table 2

OLS coefficients for mobile phone access by country income groups

	LOW INCOME			LOWER MIDDLE INCOME			UPPER MIDDLE INCOME			HIGH INCOME		
Mobile Phone Access	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**
Life Evaluation												
Income + Demos	0.135*	0.0462	0.209**	0.0691	0.0965	0.0122	0.148	-0.117	0.255*	0.440***	0.114	0.233
	(0.0745)	(0.0848)	(0.0944)	(0.0878)	(0.0987)	(0.116)	(0.109)	(0.141)	(0.147)	(0.110)	(0.136)	(0.169)
Income + Demos + Needs	0.113	0.0682	0.167*	0.0594	0.0949	-0.00341	0.140	-0.110	0.228	0.342***	0.00156	0.241
	(0.0726)	(0.0813)	(0.0916)	(0.0876)	(0.0982)	(0.117)	(0.113)	(0.140)	(0.150)	(0.108)	(0.129)	(0.171)
Income + Demos + Needs + WB	0.108	0.0698	0.155*	0.0654	0.0938	0.00418	0.120	-0.0179	0.0339	0.260**	0.0377	0.142
	(0.0721)	(0.0804)	(0.0905)	(0.0876)	(0.0982)	(0.116)	(0.111)	(0.130)	(0.146)	(0.109)	(0.124)	(0.167)
Affect Balance												
Income + Demos	0.0107	-0.0637	0.0975	-0.00974	0.153*	-0.166*	0.254***	0.177**	0.177*	0.204**	0.204**	-0.0389
	(0.0589)	(0.0764)	(0.0872)	(0.0732)	(0.0829)	(0.0960)	(0.0694)	(0.0797)	(0.0906)	(0.0933)	(0.0935)	(0.127)
Income + Demos + Needs	-0.00386	-0.0458	0.0638	-0.0319	0.138*	-0.170*	0.249***	0.165**	0.176*	0.175	0.0666	0.0272
	(0.0575)	(0.0760)	(0.0871)	(0.0734)	(0.0831)	(0.0967)	(0.0729)	(0.0829)	(0.0948)	(0.107)	(0.0988)	(0.142)
Income + Demos + Needs + WB	0.00588	-0.0275	0.0427	-0.00899	0.134*	-0.141	0.158**	0.0577	0.140	0.115	0.116	-0.0715
	(0.0546)	(0.0656)	(0.0788)	(0.0703)	(0.0734)	(0.0878)	(0.0744)	(0.0785)	(0.0956)	(0.103)	(0.0918)	(0.136)

*** p<.01, ** p<.05, * p<.10, (Design-adjusted standard errors in parenthesis)

Source: Gallup World Poll

Table 2

OLS coefficients for mobile phone & internet access by country income groups

	LOW INCOME			LOWER MIDDLE INCOME			UPPER MIDDLE INCOME			HIGH INCOME		
Mobile + Internet	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**	**Female**	**Male**	**Female × Mobile**
Life Evaluation												
Income + Demos	0.384***	0.355***	0.185	0.322***	0.486***	-0.0308	0.270***	0.189*	0.134	0.540***	0.516***	-0.0962
	(0.108)	(0.0944)	(0.122)	(0.107)	(0.0853)	(0.0900)	(0.0933)	(0.104)	(0.117)	(0.100)	(0.126)	(0.143)
Income + Demos + Needs	0.311***	0.284***	0.181	0.295***	0.457***	-0.0402	0.212**	0.145	0.121	0.440***	0.345**	-0.0907
	(0.105)	(0.0916)	(0.119)	(0.107)	(0.0876)	(0.0913)	(0.0929)	(0.105)	(0.118)	(0.123)	(0.163)	(0.194)
Income + Demos + Needs + WB	0.306***	0.266***	0.180	0.267**	0.425***	-0.0336	0.176**	0.197**	-0.136	0.386***	0.344**	-0.112
	(0.104)	(0.0903)	(0.117)	(0.108)	(0.0874)	(0.0913)	(0.0821)	(0.0987)	(0.105)	(0.112)	(0.151)	(0.176)
Affect Balance												
Income + Demos	0.0934	0.0212	0.114	0.136*	0.114*	0.0160	0.297***	0.0567	0.294***	0.309***	0.333***	-0.0989
	(0.0798)	(0.0828)	(0.0991)	(0.0819)	(0.0660)	(0.0724)	(0.0730)	(0.0766)	(0.0799)	(0.0765)	(0.0811)	(0.0978)
Income + Demos + Needs	0.0524	-0.0217	0.117	0.131	0.114*	0.0256	0.245***	0.0324	0.268***	0.224**	0.238***	-0.111
	(0.0792)	(0.0829)	(0.0985)	(0.0814)	(0.0651)	(0.0741)	(0.0717)	(0.0755)	(0.0719)	(0.0969)	(0.0868)	(0.122)
Income + Demos + Needs + WB	0.0563	-0.0517	0.120	0.0754	0.0319	0.0459	0.200***	0.0866	0.141**	0.193**	0.252***	-0.156
	(0.0718)	(0.0728)	(0.0873)	(0.0728)	(0.0584)	(0.0702)	(0.0543)	(0.0618)	(0.0666)	(0.0875)	(0.0759)	(0.107)

*** p<.01, ** p<.05, * p<.10, (Design-adjusted standard errors in parenthesis)

Source: Gallup World Poll

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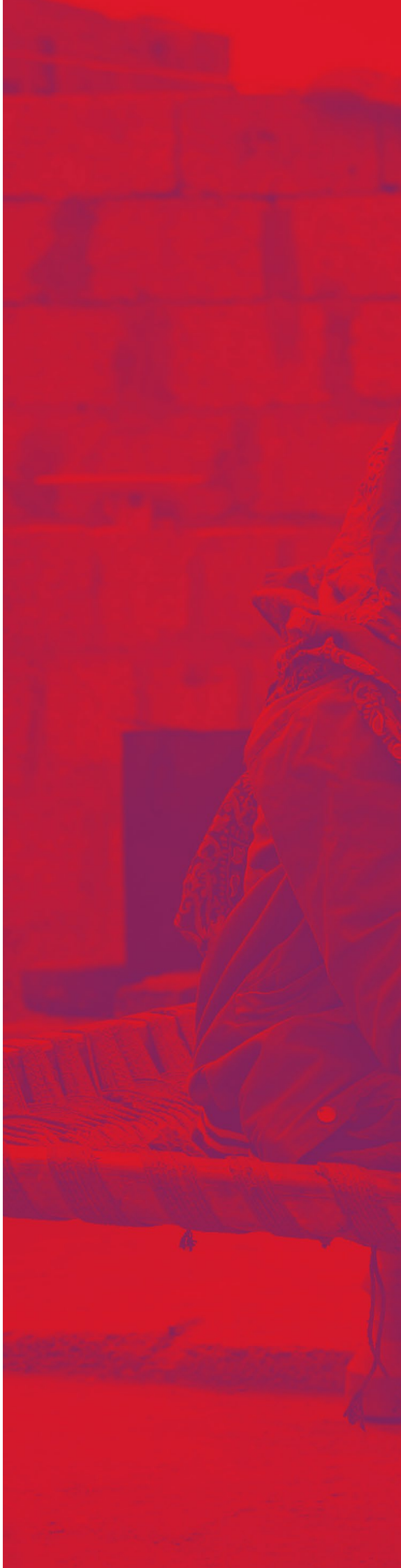

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