

PERCEPTIONS OF POWER

Championing Female Leadership in Tech



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EQUALS is a global partnership of governments and organizations dedicated to promoting gender balance in the technology sector by championing equality of access, skills and leadership for women and men alike. The Skills Coalition, Access Coalition, Leadership Coalition and a transversal Research Coalition release knowledge products periodically, organize competitions and funds, and take actions in countries and internationally to advance EQUALS's mission.

Ernst and Young (EY) generously supported this publication financially and it is a member of the EQUALS Leadership Coalition. A dedicated working group composed of academic and gender experts guided the development of the content.

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FOREWORD

As the 2019 Report of the United Nations Secretary General on Progress Towards the Sustainable Development Goals (SDGs) makes clear, none of the SDGs can be fulfilled until SDG5 (Gender Equality) is achieved. Inequalities perpetuated in the digital world significantly exacerbate gender inequalities and slow the rate of progress towards meaningful change. Meanwhile, the COVID-19 pandemic is having devastating health and economic consequences on communities across the world, threatening to reverse the advances made in recent years towards gender equality, including digital gender equality. Many women and girls will continue to be excluded from the digital economy and unable to benefit from the opportunities offered by digital technologies.

The 2020 State of Women in Tech and Startups survey found that 70% of women working in tech feel they have been treated differently at work owing to their gender, while only 11% of men in tech feel this way. In the #MeToo era, such a statistic speaks to the growing need for bold and decisive action to bridge the digital gender divide in the tech sector. Increased participation of women in the digital economy is critical for women's full participation in society and for long-term sustainable economic development.

Today, as we celebrate the 25th Anniversary of the Beijing Declaration and Platform for Action, the mobile and tech industries can play a pivotal role in delivering an action plan that reflects a renewed commitment towards the realization of digital gender equality for all. Digital technologies have become a powerful force for social and economic development, delivering substantial benefits for women and their communities. The Internet, digital platforms, mobile phones and digital financial services can help bridge the divide by giving women the opportunity to access information and acquire knowledge, develop digital skills, earn additional income, enhance their employment and career opportunities, and become pioneers for future generations of women in tech. We need to seize this opportunity to foster greater gender equality in the digital economy by supporting women's ambitions, opportunities and desires to become leaders on a par with their male counterparts.

The EQUALS Partnership for Digital Gender Equality, Ernst and Young, the GSMA and Oslo Metropolitan University are pleased to share with you this pilot study, which examines the ways in which men and women in middle- and senior-level management positions in the mobile and tech sectors define leadership, with a particular focus on the gendered differences in leadership perceptions. This is critical as the gender gap in leadership is affected by, among other things, issues of perception. We hope that the recommendations and call for action in this report will provide a meaningful roadmap to help change attitudes and, more importantly, drive action as the mobile and tech industries seek to support more women in leadership positions.

Belinda Exelby
Chair
EQUALS Steering Committee



Julie Linn Teigland
Managing Partner
EY



ACKNOWLEDGMENTS

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and the International Trade Centre (ITC), who serve as co-leads of the EQUALS Leadership Coalition, under whose guidance the pilot study took place. Special gratitude for their ongoing support and wisdom is owed to the International Telecommunication Union (ITU), in particular to Doreen Bogdan-Martin, Carla Licciardello and Loly Gaitan. We extend our warm thanks to Belinda Exelby at GSMA for being Chair of the EQUALS Steering Committee. Recognition goes to the academic contributions of Oslo Metropolitan University, notably to Jan Benjamin Kwiek. And we want to thank those experts who brought to life the call to action, including: Ana Veneroso at ITU; Astrid Thors at Liberal International; Diana Rusu at UN Women; Donna Bethea-Murphy at Inmarsat; Madi Lottenbach at Wiley Rein LLP; Lindsey Nefesh-Clarke at W4; Lena Östlund at ITU; Michelle Settlecase at EY; Natalia Vicente at ESOA; and Pippa McDougall at ITC. Last but not least, we would like to thank our Chief Editor, Dr. Andrea Ashworth at W4.



EXECUTIVE SUMMARY



This pilot study aimed to examine the ways in which men and women in middle- and senior-level management positions from across the mobile and tech industries define leadership, with a particular focus on gendered differences in leadership perception and self-perception.

Overall, the study showed that men's and women's perceptions differ across three key areas. First, men appear to identify as hands-off leaders to a greater extent than women. Second, women identify as transformational leaders to a greater extent than men. And third, women perceive themselves as concerned with others' abilities and desires to succeed to a greater extent than men. Given that prior research has shown that transformational leadership is a powerfully effective leadership approach, women in fact perceive themselves as exhibiting more effective leadership traits than men.

The study found no difference between women's and men's perceptions regarding their own opportunities for

advancement. This finding deserves further consideration and research as it is inconclusive and may be the result of the respondents' already-established professional success or other mediating factors.

Based on the study's findings, four key sets of recommendations were issued to provide best practices for promoting and retaining women in leadership positions in the mobile and tech industries. These are: 1) acknowledge a range of transformational leadership styles; 2) provide incentives for individuals to develop effective leadership skills; 3) develop mentorship and training programmes; and 4) increase research into and spread awareness of the factors affecting leadership equity and fairness.

The study concludes with a strong call for action to provide guidance to a range of stakeholder groups, including government, policy makers, the private sector, the international community and the non-profit sector.

INTRODUCTION

In recent years, research has shown an increase in women's leadership across different sectors (McKinsey, 2019). In spite of incremental progress, however, women continue to confront more barriers and enjoy fewer opportunities for advancement than men, particularly in the ICT sector (WomenWhoTech, 2020). Gender segregation persists across the ICT industry as a whole, and research reveals that, after having completed their education, many women leave the industry within a few years (EQUALS, 2019). Among leadership positions in the ICT industry, only 24% are held by women (IDC, 2019). And, according to data collected by the World Economic Forum, less than a third of women pursuing higher education choose subjects such as math and engineering, with the result that women are under-represented in STEM-related fields in general.

The gender gap in leadership is affected by, among other things, issues of perception. Smith, Rosenstein, Nikolov, & Chaney (2019) have demonstrated a gendered difference in the terms used to describe leaders. In descriptions of their leadership performance, women were assigned significantly more negative attributes than men. And yet, in contrast to such gendered differences in the way leadership is perceived and defined, research shows that men and women in leadership positions actually perform with equal success (Smith et al, 2019). And further research is needed to investigate, fully, the gendered differences in leaders' perceptions of their own leadership qualities.

The present study seeks to fill this gap with a pilot study of men's and women's perceptions of leadership, focusing specifically on the tech and mobile sector. It offers new perspectives on the ways in which women can advance in their careers and attain leadership positions.

Leadership is often defined in terms of influencing and inspiring a group of people to achieve certain goals (Silva, 2016). This study conceptualizes leadership as "the ability to, and process whereby, a person inspires and influences a group to reach common organisational goals." When exploring the definitional aspect of leadership, this study adopts a behavioural approach, aiming to identify certain traits and qualities that are evident in a leader (Dugan, 2017).

The study aims to answer this overarching question: **"To what extent do men's and women's perceptions differ when assessing their own leadership qualities in the tech and mobile industries?"** This question is based on an underlying assumption that perception is a barrier to women's advancement in leadership roles, since self-perception can either limit or expand the range of attributes and behaviours of a leader. The study's results provide an opportunity to quantify the differences between men's and women's perceptions of leadership attributes and behaviours, and to generate key recommendations and plans for action to increase the opportunities for women to advance in leadership roles.



CONTEXT OF THE FINDINGS

A total of 100 leaders in the mobile and technology industry responded to the survey, with an overwhelming majority of women represented in the sample (80%, compared to 20% men). Of these 100 leaders, 45% work in the tech industry, 30% in the mobile industry, and 25% report working for companies encompassing both the tech and mobile industries. Almost half of the sample is made up of leaders at an executive level, followed by middle-level managers (29%) and people working at a senior management level (26%). In terms of geographical representation, most of the leaders report that their company is based in Europe (49%), followed by the United States (27%), Africa (13%), and a small representation from Asia (8%). Only 3% of the sample represents companies in Latin America.

Table 1: Participant Breakdown by Region

Region	Men	Women
Africa	1	8
Asia	1	4
Europe	7	28
Latin America and the Caribbean	1	2
North America	6	17
Total	16	59
Total (in %)	21%	79%

Table 2: Participant Breakdown by Industry

Industry	Men	Women
Both	5	16
Mobile Industry	6	16
Tech Sector	5	27
Total	16	59
Total (in %)	21%	79%

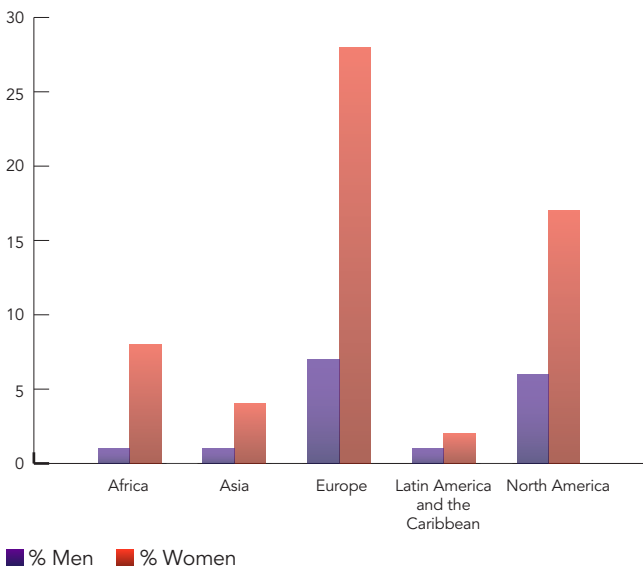
Of the women that responded to our survey:

45%
work in the
tech industry

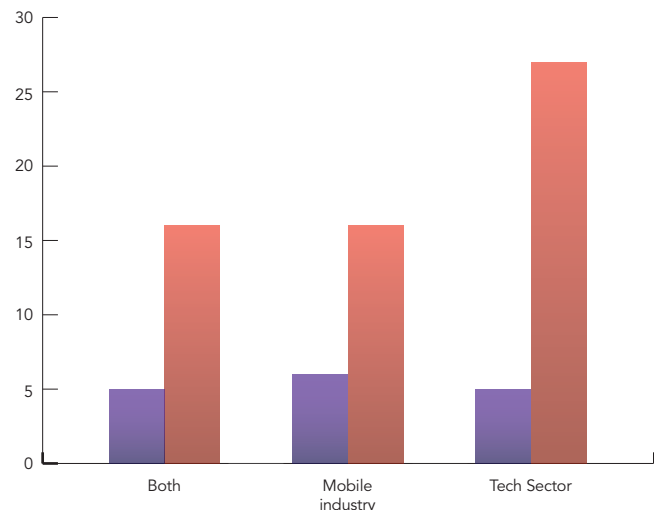
Of the leaders that responded to our survey:

49%
report that their
companies are
based in **Europe**

Male and Female Participants by Region



Male and Female Participants by Industry



KEY FINDING ONE

WOMEN AS MENTORS

“Technology, by its very nature, is transformative. It has the power to change every level of human society, from governments to individuals. Because the digital future is so important to humanity, women must have equal representation in technology leadership.”

Doreen Bogdan-Martin,
Director of the ITU Telecommunication Development Bureau

KEY FINDING ONE

WOMEN AS MENTORS

Women perceive themselves as being more focused on developing others' abilities and desires to succeed. A larger proportion of women than men in the survey indicated that they "frequently, if not always" seek to: heighten "others' desire to succeed" (39% women vs. 19% men); effectively "meet organisational requirements" (56% women vs. 31% men); and lead "a group that is effective" (25% women vs 12% men). This approach, focusing on building a team to achieve effectiveness and success in leadership, is in line with the transformational leadership model, which focuses on a leader's ability to inspire and initiate great achievements by creating a strong company vision, encouraging group progress and being a good role model. The study's results suggest that more women than men perceive their roles as leaders of effective teams and encourage their peers' and subordinates' success. The tendency for women to identify as hands-on, transformational leaders is significant as research demonstrates that these leadership traits and approaches are more effective than others (Walumbwa et al, 2008; Choi et al, 2017).

This finding contradicts prior research, which suggested that men are more likely than women to adopt more transformational leadership styles (Pohl, Desrumaux, & Vonthron, 2020). Pohl et al found that, for men, the relationship between transformational leadership was moderated by their self-efficacy. They further found that self-efficacy is strongly associated with the adoption of a transformational leadership style, and argued that self-efficacy is essential to transformational leadership. In contrast, the present study shows that women identify as transformational leaders to a greater extent than men -- a finding that may be indicative of the specific experiences of women in the tech and mobile industries. It may be helpful for future research to focus on others' perceptions of women's and men's transformational leadership skills and compare those perceptions to the leaders' self-assessments.

Of the women that responded to our survey:

56%
indicate that they frequently **"meet organisational requirements"**

RECOMMENDATION

Acknowledge and encourage a range of transformational leadership styles. Existing leaders need to have a strong understanding of effective transformational leadership styles. Organisations can help by acknowledging the effectiveness of specific leadership traits and skills, including hands-on and transformational leadership qualities, with a focus on helping others to succeed. Expanding the understanding and adoption of various leadership styles will help to highlight the current effectiveness of women leaders and their preferred leadership styles. It will also help to support future leaders (of any gender) to acquire the skills they need to become more effective in their work. This recommendation is particularly relevant for the tech and mobile industry because companies can spotlight women as role models for effective leadership and thus inspire early career employees to develop more effective leadership traits.

CASE STUDY

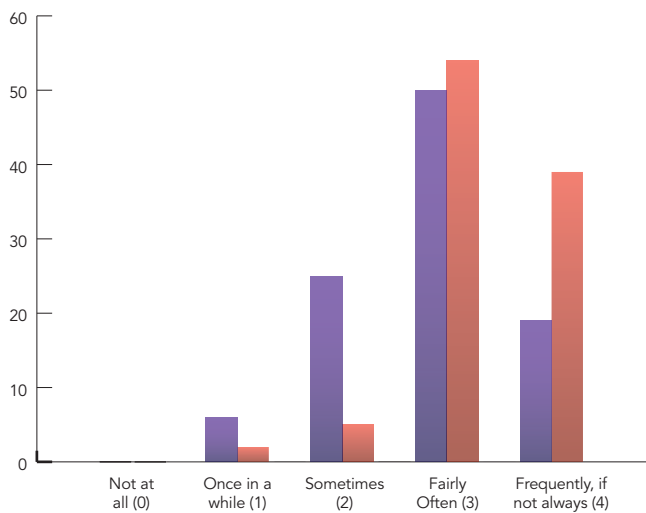
The EQUALS in Tech Awards seek out organisations and individuals who have dedicated great effort to improving digital inclusion and increasing opportunities in the tech industry for women and girls around the world (EQUALS, 2020). Awards like these are important for acknowledging the effort that goes into promoting women and girls in the tech and mobile industries. As this study shows, women perceive themselves as being more transformational leaders, and therefore more effective leaders, than men. The tech and mobile industry can help showcase the ways in which women act as transformational leaders and reward transformational leadership styles overall.

KEY FINDING ONE WOMEN AS MENTORS

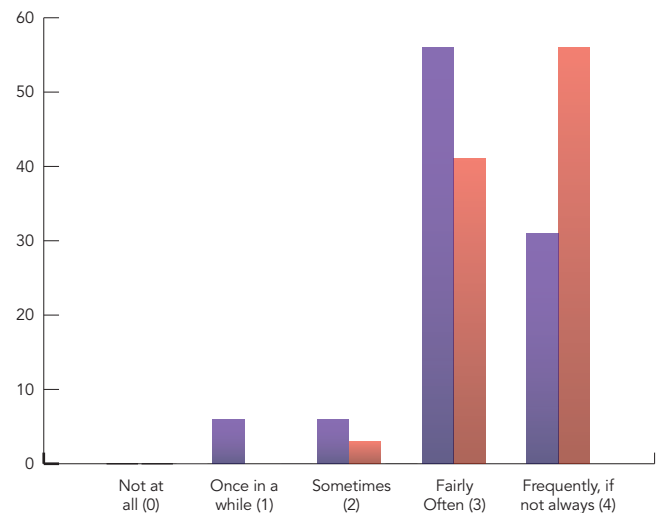
Table 3: Key Finding 1, Outcomes of Leadership : Percent Differences for Largest Effect Size Items

Outcomes of Leadership	I heighten others' desire to succeed		I am effective in meeting organisational requirements		I increase others' willingness to try harder		I lead a group that is effective	
	Men	Women	Men	Women	Men	Women	Men	Women
Not at all	0	0	0	0	0	0	0	0
Once in a while	6	2	6	0	6	2	6	0
Sometimes	25	5	6	3	19	17	12	7
Fairly Often	50	54	56	41	62	56	50	37
Frequently, if not always	19	39	31	56	12	25	31	56
Total	100%	100%	100%	100%	100%	100%	100%	100%

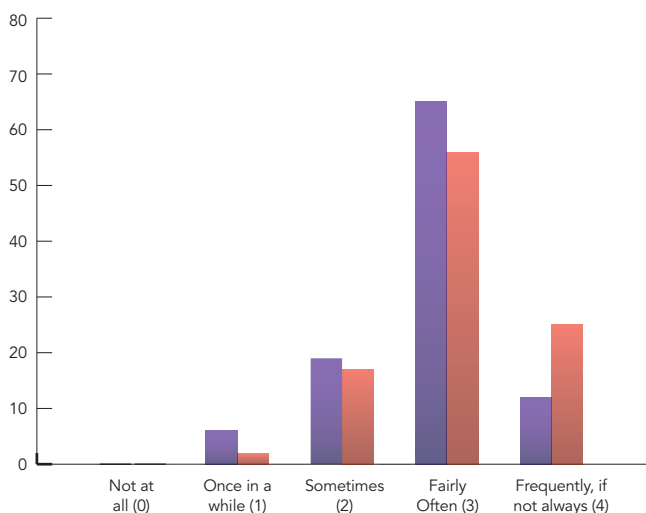
I heighten others' desire to succeed



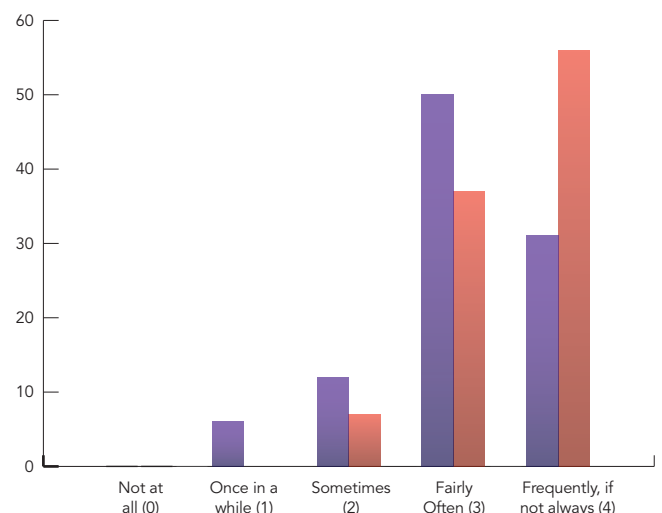
I am effective in meeting organisational requirements



I increase others' willingness to try harder



I lead a group that is effective



KEY FINDING TWO

MEN AS HANDS-OFF LEADERS

“Back in the 1970s I was fortunate to be amongst one of the first cohorts of girls to be offered the chance to learn basic coding. Now more than ever, it is imperative that girls are just as well equipped as boys to become leading players in the ICT sector, contributing to and benefiting from the technological advances that will shape all of our futures. As Chair of the EQUALS Steering Committee and Head of International Relations for GSMA, I am proud to be working with international partners from around the globe to ensure that every girl can start believing that a scientist, a software engineer, or a tech inventor can look just like her.”

Belinda Exelby, Head of International Relations, GSMA;
Chair of EQUALS Steering Committee

KEY FINDING TWO MEN AS HANDS-OFF LEADERS

The current study found that **men identify as passive-avoidant** in their leadership styles to a greater extent than women. Passive-avoidant is also known as Laissez-Faire leadership, a style that takes a hands-off approach to managing decisions. Such leaders will usually not set any expectations for their followers, as they believe that this slows down their problem-solving and decision-making processes (Bass and Avolio 1997, cited in Xu et al, 2016).

This study shows that men, to a greater extent than women, identify as passive-avoidant and laissez-faire in their leadership styles. Men report more often than women that they “delay responding to urgent questions” (88% men vs. 42% women), “avoid making decisions” (81% men vs. 37% women), and “fail to interfere until problems become serious” (94% men vs. 66% women). Men tend to perceive themselves as leaders who try to implement a hands-off approach, refraining from any interference unless something upsets the status quo.

Women, by contrast, tend to be more attuned to specific details and attend to day-to-day requirements, including conflict resolution and problem solving. This type of micromanagement is found in both men and women, but women are also more apt than men to impose unrealistic expectations on themselves and their own performance -- endeavoring to never make a mistake. Transformational leaders are more effective than leaders who adopt other overall leadership styles, but the most effective transformational leaders are those who encourage their teams to make their own decisions and learn from mistakes.

Of the men that responded to our survey:

88%
report that they
delay responding to urgent questions

CASE STUDY

Macromanagement.

Research suggests that passive, hands-off approaches to leadership might give rise to ineffective teams and wasteful habits. In their book “Stop Spending, Start Managing” (2016), Tanya Menon and Leigh Thompson describe what they call “the Management Trap”. They argue that the hands-off approach can lead to employees becoming confused and ineffective and suggest that hands-off forms of “macromanagement” may be more dangerous than micromanagement. They stress that leaders need to find a balance between micromanagement and macromanagement, remembering that giving employees too much freedom and uncertainty can lead to unexpected and negative consequences.

RECOMMENDATION

Provide incentives for individuals to develop effective leadership skills.

The results show that men perceive themselves as having a more hands-off approach to leadership than women. Organisations should encourage and promote an effective balance between hands-off and micromanagement approaches. This entails tackling problems before they become serious and upset the status quo, to ensure that employees do not have to work in uncertainty. Organisations should also practice an active decision-making process to give clear direction for employees and avoid miscommunication and ineffectiveness.

This recommendation is particularly relevant for the tech and mobile industry as companies need effective leadership in order to ensure that problems are managed before becoming serious.

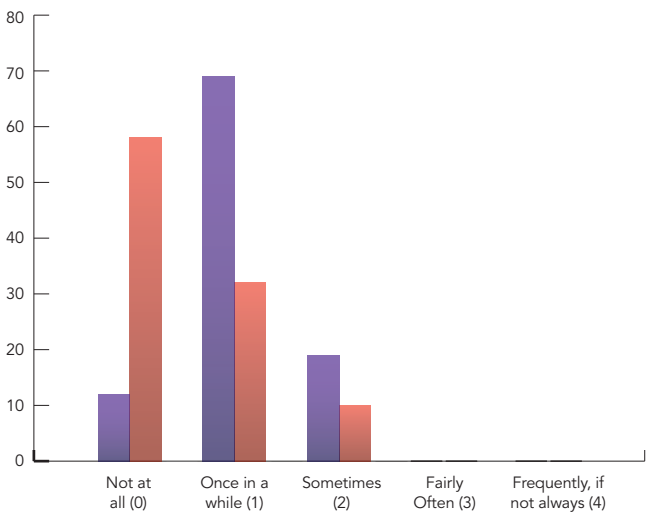
KEY FINDING TWO

MEN AS HANDS-OFF LEADERS

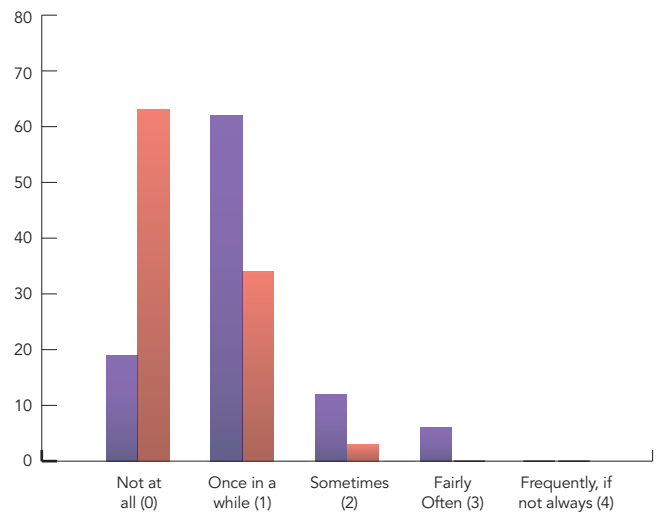
Table 4: Key Finding 2, Percent Laissez-Faire by Gender

Passive-Avoidant	I delay responding to urgent questions		I avoid making decisions		I fail to interfere until problems become serious	
	Men	Women	Men	Women	Men	Women
Not at all	12	58	19	63	6	34
Once in a while	69	32	62	34	19	41
Sometimes	19	10	12	3	44	22
Fairly Often	0	0	6	0	25	2
Frequently, if not always	0	0	0	0	6	2
Total	100%	100%	100%	100%	100%	100%

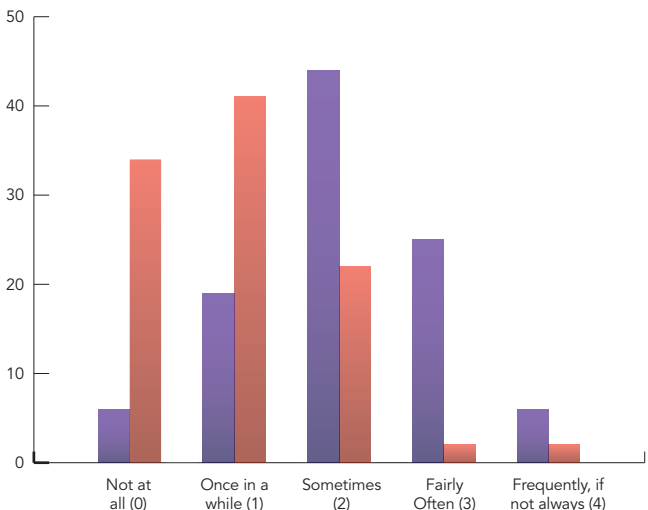
I delay responding to urgent questions
(Passive Avoidant, Laissez-Faire)



I avoid making decisions
(Passive Avoidant, Laissez-Faire)



I fail to interfere until problems become serious
(Passive Avoidant, Management by Exception)



Of the men that responded to our survey:

94%
report that they **“fail to interfere until problems become serious”**

KEY FINDING THREE

WOMEN AS TRANSFORMATIONAL LEADERS

“Driving sustainable gender balanced leadership in tech should not be just about quotas and numbers. Perceptions of power do matter and we need to work harder at ensuring that female leaders are in a position to drive genuine change by having an equal footing at the decision-making table. This is not just about equal opportunity but also about increased prosperity for society and industry alike.”

Pamela Coke-Hamilton, Executive Director, International Trade Centre

KEY FINDING THREE

WOMEN AS TRANSFORMATIONAL LEADERS

Women appear to identify more as transformational leaders than men.

Transformational leadership focuses on a leader's ability to inspire and initiate success by creating a strong team vision and acting as a good role model. A transformational leader is one who exhibits high ethical and moral standards and emphasizes inspirational motivation, intellectual stimulation and individual consideration.

A greater proportion of women than men report that they almost always "specify the importance of having a strong sense of purpose" (58% women vs. 12% men) and "talk optimistically about the future" (47% women vs 0% men). And women more frequently report that they "emphasize the importance of having a collective sense of mission" (48% women vs 12% men). The study reveals that more women than men perceive themselves as having these leadership traits. A transformational leader aims to be a good role model and to set a good example and expectations for his/her/their subordinates. This suggests that women, to a greater extent than men, place importance on being a motivational and admired role model with a hands-on approach.

This finding aligns with previous research that found that women leaders are generally perceived as being more democratic, participatory and transformational than men (Trinidad, Anthony & Normore, 2004) -- perhaps because there is a gendered stereotype that women are "more sensitive, diplomatic, and communicative" than men (Munir, 2020: 101). More empirical data is therefore needed on gender differences in transformational leadership, but the existing literature suggests that among transformational leaders of any gender, the behaviours and applications of the transformational leadership style vary significantly between men and women. Women are considered more caring, better at communicating, and more effective in their mentorship style than men (Eagly & Johannesen, 2001).

The way transformational leadership manifests itself in different environments may depend on myriad factors, including the work environment, the economic sector in which the study is conducted, and the particular leadership needs of the job position. For example, a study conducted by Munir (2020) on gender differences in the transformational leadership behaviours of school principals and the impact of these differences on the relative academic effectiveness of the school teachers concluded that there were no significant gender differences between male and female principals' transformational leadership behaviours -- and identified a negative relationship between principals' transformational leadership behaviours and the academic effectiveness of teachers.

RECOMMENDATION

Develop mentorship and training programmes. Mentorship and training programmes need to identify and implement effective ways to encourage women who do not currently hold leadership positions to adopt those qualities that women leaders and role models identify as having. This study suggests the need for role-modeling programmes focused on connecting current women leaders to potential women leaders. It suggests the need for training programmes that focus on the traits of effective leaders, and more specifically on the effectiveness of women leaders. This recommendation is particularly relevant for the tech and mobile industry as companies continue to develop mentorship and training programmes to encourage more women to join the industry.

Of the women that responded to our survey:

58%

report that they frequently **specify the importance of having a strong sense of purpose**

CASE STUDY

PwC's Women in Tech

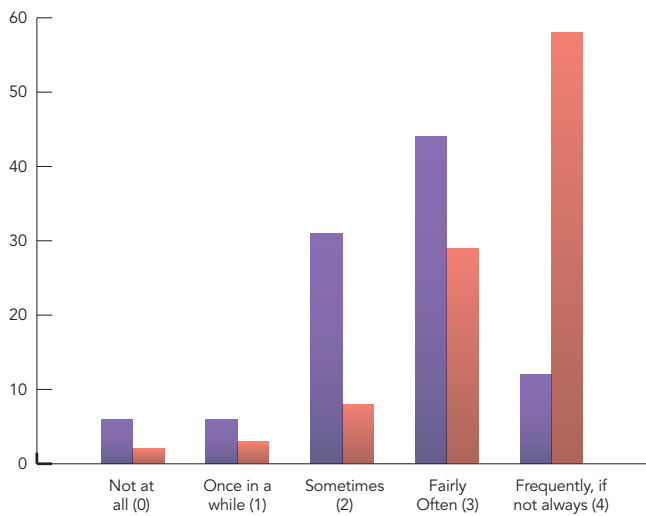
mentorship programme gives women in tech the opportunity to spend time with and learn from successful women within the company. This is intended as an experience programme to kickstart the women mentees' careers. The programme allows mentees to shadow successful women working in cyber security, data, analytics and eForensics. This enables aspiring women to gain valuable insight into the day-to-day details, demands and rewards of life as a professional woman in the tech industry. The programme is aimed at students seeking a career in the tech industry.

KEY FINDING THREE WOMEN AS TRANSFORMATIONAL LEADERS

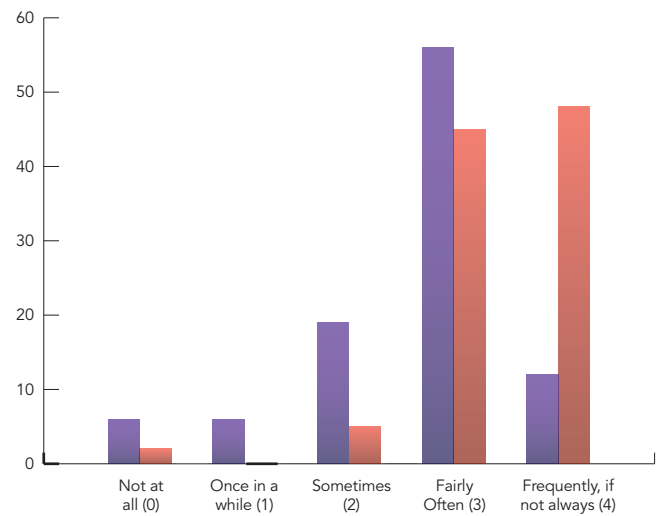
Table 5: Key Finding 3, Percent Reporting Transformational Practices, by Gender

Transformational	I specify the importance of having a strong sense of purpose (IIB)		I emphasize the importance of having a collective sense of mission (IIB)		I talk optimistically about the future (IM)	
	Men	Women	Men	Women	Men	Women
Not at all	6	2	6	2	0	0
Once in a while	6	3	6	0	12	2
Sometimes	31	8	19	5	19	14
Fairly Often	44	29	56	45	69	37
Frequently, if not always	12	58	12	48	0	47
Total	100%	100%	100%	100%	100%	100%

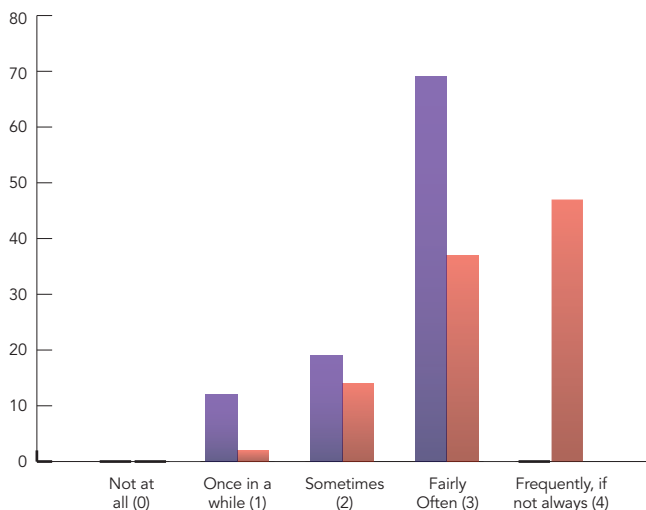
I specify the importance of having a strong sense of purpose (Idealized Influence Behaviour)



I emphasize the importance of having a collective sense of mission (IIB)



I talk optimistically about the future (Inspirational Motivation)



■ % Men ■ % Women

Of the women that responded to our survey:

47%
report that they frequently **“talk optimistically about the future”**

KEY FINDING FOUR OPPORTUNITIES FOR ADVANCEMENT

“Gender diversity fuels a stronger growth culture and sustained productivity. More incentives and pressure is needed to ensure women are placed in top management positions to drive a healthier & more sustainable future for businesses, government and humanity at large.”

Aarti Holla-Maini, Secretary General, ESOA

KEY FINDING FOUR

OPPORTUNITIES FOR ADVANCEMENT

The final finding yielded an inconclusive result in the study of men’s and women’s perceptions of fairness with regard to their own opportunities, rewards, value to the company, and possibilities for advancement. **No significant difference was found between the way that men and women perceive themselves in terms of equity and wellness.**

Table 6: Key Finding 4, Equity by Gender

	My manager gives me fair and equal opportunities to develop leadership skills		My leadership skills are fairly rewarded by my manager		Performance reviews at my company are fair and objective		Promotions at my company are given to the most qualified candidates		Leadership Opportunities in my industry go to the most deserving and qualified employees	
Equity	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Not at all	0	2	7	3	0	7	0	10	0	8
Once in a while	6	12	0	20	0	12	7	19	7	19
Sometimes	25	21	20	25	33	25	47	24	53	32
Fairly Often	44	38	67	27	60	34	33	29	27	24
Frequently, if not always	25	28	7	24	7	22	13	19	13	17
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 7: Key Finding 4, Wellness by Gender

	I am able to thrive as a leader at my company		My leadership skills are valued by my company		I have equal access to senior leaders at my company who have the power to advocate for me		I am able to make connections with influential industry leaders who can help advance my career	
Wellness	Men	Women	Men	Women	Men	Women	Men	Women
Not at all	7	8	7	5	13	3	7	5
Once in a while	7	7	7	14	7	22	0	17
Sometimes	27	24	27	15	13	8	33	25
Fairly Often	40	34	40	31	40	32	47	32
Frequently, if not always	20	27	20	36	27	34	13	20
Total	100%	100%	100%	100%	100%	100%	100%	100%

KEY FINDING FOUR OPPORTUNITIES FOR ADVANCEMENT

At the outset of the study, we anticipated that women would perceive that they face greater barriers to fairness and opportunity. The study did not, however, show a difference between men and women in this category. It is possible that the results were skewed by the study's focus on women who have already attained leadership positions, so that they tend not to experience -- or feel that they are experiencing -- the problem of greater barriers or unfairly limited opportunities for advancement.

No significant difference was found between the way that men and women perceive themselves in terms of equity and wellness

Of the women that responded to our survey:

67%

report that they feel fairly often or frequently **that their leadership skills are valued by their company**

CASE STUDY

EY's Women Fast Forward adopts an umbrella approach to a number of initiatives and activities around the world to help women advance their careers and, in turn, attain more decision-making roles. Signature programmes include POWER Up (™), a proprietary personal leadership development programme for women; Winning Women (™), a mentoring programme for early stage high-growth women entrepreneurs; and EY STEM Tribe, an initiative to inspire the next generation of girls to pursue STEM careers, using a technology platform to connect girls with professionals and leaders in STEM fields. EY Women Fast Forward team members and other EY professionals participate on an ongoing basis in global policy efforts to reduce the digital gender divide.

RECOMMENDATION

Improve research on leadership equity and fairness. The study's results show that men and women regard equity and fairness similarly, perceiving no gendered differences on this dimension. This finding is ambiguous, and new research is necessary in order to fully understand the reasons why men and women regard themselves similarly when it comes to equity and fairness. Research on the influence of organisational culture on women's perceptions of leadership could reveal as-yet-unrecognized barriers that women do in fact face when it comes to acquiring leadership positions. Research could also examine whether this study's finding is specific to the tech sector. This recommendation is particularly relevant for the tech and mobile industry, which could help to drive research and innovation in this area and examine the ways in which equity and fairness affect women at earlier stages in their careers.



Create opportunities for fostering gender-inclusion in the tech sector

For the public sector, one key call to action is the need for evidence-based decision-making for gender inclusion in the tech sector. In addition, the public sector can provide legal and policy incentives (financial and non-financial) to encourage and, in some instances, mandate: 1) gender balance in decision-making positions (such as on boards of directors); 2) the implementation of education and lifelong learning policies that encourage women and girls to enter STEM fields and acquire digital and soft skills; and 3) multi-stakeholder collaboration. The public sector is also encouraged to consider a gender-equality approach in the formulation of public policies, especially those linked to the education, labor market and digital agendas.

International organisations can also play a key role in promoting a more gender-inclusive ICT sector by raising awareness of the social and economic benefits of improving gender inclusion in the tech sector. They can establish commissions for a more gender-inclusive tech sector, promote awareness-raising initiatives, set out charters for organisational governance and create public platforms to spotlight women as leaders and role models. In the private sector, opportunities exist for raising awareness and good practice examples, connecting mentoring and

shadowing programmes with promotion opportunities, appointing women in leadership positions as champions of gender inclusion, systematically addressing unconscious gender bias in recruitment and management (including through training programmes), and establishing zero tolerance programmes for sexual harassment.

Raise awareness about organisational culture in equity and fairness

For the public sector, this includes providing incentives for industry to reform organisational culture, highlighting positive stories about women's leadership in the tech sector, and providing funding for research and innovative work on gender bias in the tech industry.

International organisations can help raise awareness about the importance of organisational culture in promoting equity and fairness by continuing to emphasize the need to achieve the UN Sustainable Development Goals, particularly in the area of corporate social responsibility. International organisations have an important role to play in creating cross-sectoral awareness, raising campaigns in cooperation with key UN agencies, developing toolkits for public and private sector use, highlighting the impact of adopting a gender focus in sustainable inclusive development, and continuing to support key initiatives such as EQUALS and Generation Equality.

CALL TO ACTION

In the private sector, one key point of action for industry is to increase the use of reverse mentorship programmes that enable women who are not in leadership positions to provide constructive feedback on the existing career development paths to the leadership teams in their companies. Industry can also include gender equity and fairness in their company values and belief statements, address gender equity and fairness in their onboarding of new hires, link management and executive pay to diversity performance, promote diversity as a key factor for increasing market share, raise awareness of diversity as a customer-centric value proposition, encourage gender diversity in supply chains and service design, review organisational policies and documents for implicit gender bias, track measurable data on the attrition of women in their careers, ensure that hiring decisions reflect the need for diversity and inclusivity, and act as active collaborators in research on and innovation in gender inclusion. Civil society can play an important role in raising awareness about organisational culture by developing funding programmes directed at awareness-raising and implementation activities, and highlighting the need for technology that is designed to be gender-inclusive and therefore meets the needs of girls and women to the same extent as boys and men.

Acknowledge and encourage effective leadership styles in mentorship and training programmes

The public sector can acknowledge and encourage effective leadership styles by funding research and innovation in partnership with academia.

International organisations can also play a valuable role by creating a repository of international good practices and providing platforms for development of mentoring programmes. In addition, international organisations can encourage cross-gender mentorship programmes such as those provided by the ITU, including the Empowering Women in Cybersecurity Global Mentorship Programme and the Network of Women for the World Radiocommunication Conference.

The private sector can play an important role by using case studies to create evidence-based mentorship programmes and implementing mentorship and sponsorship programmes that explicitly promote transformational leadership traits.

Provide incentives to the tech sector to foster women's leadership

The public sector has the opportunity to promote women's leadership in the tech sector by implementing a variety of



policy instruments, including incentives and disincentives, adopting gender-inclusive childcare policies, and implementing anti-discrimination policies that recognize gender and intersectional discrimination. In addition, the public sector can provide awards for women's leadership, tax incentives and public procurement requirements for gender inclusion, and introduce potential sanctions for companies that fail to address gender imbalance or inequality over time.

For international organisations, key opportunities for incentivizing women's leadership include creating certification schemes for industry and establishing quality assurance seals for reaching specific gender -inclusion indicators.

In the private sector, companies should consider the ways in which they can measure women's leadership.

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RESEARCH METHODOLOGY

This project utilizes an established survey of men's and women's perceptions of leadership in order to efficiently collect large amounts of comparable data from a range of international participants. The study sample represents middle- and senior-managers in ICT firms in the Global North and Global South. The study gathered 108 completed surveys, but excluded 31 that had more than ¼ missing responses and one that had no coding for gender. **The result was N=75 (59 Women, 16 Men)** for nearly all analyses.

Participants were surveyed using the Multifactor Leadership Questionnaire (MLQ Self), a validated and commonly used instrument for evaluating leadership qualities developed by psychologists Bernard Bass and Bruce Avolio. The short form of the MLQ Self (45 items, approximately 15 mins.) was administered in August, 2020 in order to assess individuals' perceptions of their own leadership attributes and behaviours. These data provide a basis for further exploring the gendered aspects of leadership. The MLQ Self was subsequently revised and is now commonly referred to as the MLQ-5X (Bass, 1985). The survey instrument aims to measure different leadership styles and behaviours and categorize them into transformational, transactional and non-active leadership models (Sudha et al, 2016). The MLQ Self was supplemented with a separate set of 8 items focused on assessing the perceived role that gender plays in leadership positions and the barriers that individuals may confront because of their gender.

Researchers who have studied different leadership styles and behaviours have categorized them into: 1) transformational; 2) transactional; and 3) non-active ("passive") leadership models (Sudha et al, 2016). Sudha et al define transformational leadership in terms of a leader's ability to motivate team members, to inspire and initiate great achievements as a group by creating

a strong company vision and being a good role model. Transactional leadership, on the other hand, focuses more on direct control over employees and on the link between performance and reward, appealing to individuals' self-interest rather than cultivating group progress (Sudha et al, 2016). Non-active leadership models, often referred to as Laissez-Faire, focus more on a hands-off approach to leadership.

According to Xu et al (2016), the transformational leadership model is made up of 5 elements: 1) idealized influence attributes (IIA), which pertain to the idea followers have of their leader as a respected and admired role model; 2) idealized influence behaviour (IIB), which refers to the notion of a leader who exhibits high ethical and moral standards; 3) inspirational motivation (IM); 4) intellectual stimulation (IS); and 5) individual consideration (IC).

Transactional leadership encompasses 3 approaches (Sudha et al, 2016). 1) Contingent reward (CR): a leader sets up clear expectations for followers and rewards followers if and when these expectations are met. 2) Management by exception, active (MBEA): a leader monitors progress and issues corrective responses when his/her/their expectations are not met (Xu et al, 2016). 3) Management by exception, passive (MBEP): a leader generally does not interfere with workflow, and enforces consequences only when necessary for maintaining the status quo. Finally, Laissez-Faire refers to a leadership style in which the leader usually does not set any expectations for followers as the leader believes this would slow down problem-solving and decision-making processes (Bass and Avolio, 1997, cited in Xu et al, 2016).

Research strongly suggests that the transformational leadership style is the most successful approach in terms of efficiency (Walumbwa et al, 2008; Choi et al, 2017).

PRIMARY INDEX SCORES

Variables	Group 1 (Man)	Group 2 (Woman)	Statistic	Degrees of Freedom	P Value
Mean_Equity_Fair	16	59	0.877	40.6	0.386
Mean_Equity_Well	16	59	-0.165	22.3	0.87
Mean_Outcomes_Effectiveness	16	59	-1.79	17.9	0.0904
Mean_Outcomes_Extra_Effort	16	59	-2.08	23.2	0.0488
Mean_Outcomes_Satisfaction	16	59	-0.987	21.0	0.335
Mean_Passive_Avoidant_Laissez_Faire	16	59	2.33	21.2	0.03
Mean_Passive_Avoidant_Management_by_Exception*	16	59	3.16	21.3	0.00471
Mean_Transactional_Contingent_Reward	16	59	-1.76	18.9	0.0953
Mean_Transactional_Management_by_Exception	16	59	0.0792	23.2	0.938
Mean_Transformational_Idealized_Attributes*	16	59	-2.20	25.3	0.0371
Mean_Transformational_Idealized_Behaviour	16	59	-3.30	19.7	0.00364
Mean_Transformational_Individual_Consideration	16	59	-2.13	18.5	0.0469
Mean_Transformational_Inspirational_Motivation	16	59	-2.59	20.9	0.0171
Mean_Transformational_Intellectual_Stimulation	16	59	-1.19	23.4	0.248

* These two key findings are also significant using adjusted p-values.