



# Value of Daycare Services at the Workplace

Case Study on the Telecommunications Sector in  
Jordan

Yacoub Shomali

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## About the SADAQA Campaign

SADAQA was launched as a campaign in 2011 and in 2012 was registered as a non-profit organization mobilizing a wide group of activists advocating for a work friendly environment in compliance with Article 72 of the Labor Law and with the aim to increase women's economic participation in Jordan.

### Box 1 - Article 72 of Jordan's Labor Law

*“The Employer who employs a minimum of twenty female Employees should provide a suitable place under the custody of a qualified caregiver to care for the Employees’ children of less than four years of age provided that the number of children is not less than ten.”*

Over four years SADAQA has managed to raise awareness on the importance of Article 72 and has empowered women to start demanding for this right. Prior to its efforts, most women in the labor force never knew that such an Article existed. It has also been strategic and proactive in its approach and has managed to create momentum for the importance of facilitating an overall gender sensitive environment at the workplace for Jordanian women.

SADAQA's approach to advocating for Jordanian working women is three-fold:

1. to raise the level of awareness of Article 72 amongst working women and employers and on the importance of work friendly environment for women in general,
2. to assist the Ministry of Labor in its enforcement measures and issue specific guidelines for daycares at the workplace,
3. to pressure companies and share knowledge on the importance of daycares and provide technical assistance to facilitate the establishment of daycares in Jordanian private sector institutions. In this regard, SADAQA developed a manual of how to set up, run and manage a daycare.

## Forward

Women's low participation rates in the Jordanian economy, which stands at 13.3% today and is considered among the lowest in the world, present a high cost to the Jordanian economy, in the context where many of its women, particularly the young and economically active, are very educated. SADAQA was launched through a mobilization of a wide group of activists advocating for a work-friendly environment in compliance with Article 72 of the Jordanian Labor Law and with the aim to increase women's economic participation in Jordan. Over five years since its launch, SADAQA has managed to raise awareness on the importance of Article 72 and has empowered women to start demanding for this right. Prior to its efforts, most women in the labor force never knew that such a provision existed.

Economic literature has found that establishing daycares not only allows women to be more productive at work but also helps them retain their jobs. If this is addressed in Jordan it could contribute towards boosting the economic participation for women. So in order to help women who have attained credentials and experience for professional careers lead successful lives both at home and in the workplace, Article 72 needs to be activated. However, lack of enforcement, awareness, or simple non-compliance with the article forces many working mothers to leave their professional pursuits to take care of their children.

In 2011, SADAQA carried out a study through focus group discussions on the importance of daycares at the workplace. The research demonstrated the multiple benefits daycares have on working mothers and on employers. Benefits of daycares on working mothers show how women could overcome social and psychological pressures associated with leaving their children behind. Furthermore, it increases the household's income as parents no longer need to take leave without pay or vacation time to care for their children at home. Daycare services minimize transportation expenses and time spent outside the office and on the roads. At the same time, proximity to daycares improves quality of care provided for children and daycares themselves enhance children's independence, and their emotional and social growth.

Generally, friendlier working environments for women contribute to improved overall performance and productivity and increases women's chances for promotion and leadership. Benefits of daycares for employers include better staff morale and job satisfaction, improvement of interpersonal skills, and reduction in stress levels at work. It also enhances the sense of belonging to the company and improves networking amongst employees. It decreases absenteeism and turnover, utilizing a broader range of employee skills and increases productivity.

Although the 2011 research conducted by SADAQA revealed many benefits of daycares for employers, helping SADAQA convince many employers and business owners in setting up daycares, in the five years since the release of that study, many employers still consider daycares as both a financial burden and a liability. The repercussion of childcare difficulties for the workplace is the employers' first argument against having a daycare.

As such, SADAQA felt the urgent need for a study aimed at showcasing the value of daycares in the workplace to convince decision-makers and policy-makers of the importance of daycares for increasing women's economic participation. Per the ILO, increasing women economic participation can boost the Jordan's GDP by 2 billion USD annually. In an economy that is suffering from very low participation rates for women, a study was needed to measure the value of daycares.

In looking at studies carried out in many parts of the world, not enough was known about how workplace daycares could potentially have a financial impact on businesses. SADAQA commissioned an economist, Yacoub Shomali, who possesses the required credentials and skills to carry out the study. The research focused on the Telecom sector in Jordan as a sector case study given its high percentage of women employees. Although the sample was small, substantial results were generated to help make important conclusions on the value of daycares at the workplace and building a business case centered around a cost-benefit analysis to establishing daycares at the workplace.

SADAQA would like to commend Yacoub Shomali on his excellent work, rich knowledge, and dedicated efforts in carrying out this study. We are also grateful for the International Labour Organization and in particular for Ms. Emanuela Pozzan and Ms. Reem Aslan for their useful insight and support. We would like to also thank the Norwegian Embassy in Jordan for their kind support. Additionally, we would like to thank Orange and Zain Telecom for accepting to participate in the study and helping disseminate the questionnaire and in particular Ms. Rasha Barakat, Ms. Madina Naghawi and Ms. Ghalia Homsy from Zain and Ms. Rana Abu Louha from Orange. We would like to thank our partners who participated in the brainstorming session that provided valuable input and ideas to the research including Dr. Omar Razzaz, Dr. Sawsan Majali, Ms. Laila Hamarneh, Ms. Lina Hasan, Ms. Nour Mugarbi and Dr. Eman Akor.

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*On behalf of SADAQA Team*

**Randa Naffa**

**Lara Ayoub**

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## Executive Summary

Despite having an overly educated female population, Jordan suffers from a dismal labor participation rate for women in the workforce of 13.3% in 2015 compared to men's 60%. As such, considerable efforts are made to boost women's participation in Jordan's economy as research points to benefits amounting to the equivalent of nearly 46% of GDP from closing the gap in gender participation in the workforce.

Economic literature sites the burden of childcare as one of the obstacles against higher participation of women in the labor market. A study by the Higher Population Council shows that about 45% of all women who leave the workforce attribute it to family circumstances and the burden of childcare. To address this issue, Article 72 of Jordan's Labor Law No. 8 of 1996 and its amendments sets forth the conditions upon which an employer must establish a daycare service at their workplace. However, upon observing implementation of Article 72, multiple issues emerged that counteracted the intended goal behind that article. For example, some companies refrain from recruiting women to prevent the application of Article 72 on their establishment.

Given the aforementioned challenges, this research paper will attempt to develop an understanding of the preferences of employees towards a daycare service in particular and their workplace in general. More importantly, this paper will attempt to place a numerical figure on the value employees place on having a daycare service at their workplace and provide commentary on the appropriate public policy in response to the results.

Following economic literature, this paper utilized the use of the Contingent Valuation Method to quantify the value of daycare services in the workplace. This method was conducted using an online survey that asked respondents, in a referendum style, about their stated value for daycare services in their workplace through asking them how much would they be willing to contribute to establish a daycare service at their workplace. In addition to the above, the survey contained questions that aim to develop an understanding towards the respondents' preferences towards different workplace attributes and different daycare attributes.

This study uses the telecommunications sector as a case study given its high prevalence of women as a share of its employees as well as their technological literacy which assisted in the completeness of the survey responses collected electronically as part of this research.

This paper shows that employees within the telecommunications sector, and within the sample surveyed, place a high value on daycare services at their workplace. Daycare services were found to be the most important attribute among other

workplace attributes such as extended paid maternity leave, equal pay for work of equal value, and flexible working hours.

Furthermore, the paper finds that, among several different possible traits for a daycare service, the most important trait the respondents looked for was proximity to the workplace followed by excellent hygiene and safety and having the same opening hours as the workplace. These choices reinforce the previous conclusion that employees highly prefer having a daycare service at their workplace.

The majority of respondents placed a value between JD 51 and JD 100 per person per month on daycare services at the workplace. The average value was estimated at JD 52.2 per person per month or the equivalent of JD 627 per employee per year. This value represents a direct benefit to the employer as it can be thought of as foregone salary increases or a non-monetary benefit provided to its employees. Such benefits may be provided, with appropriate public policies, at a cost lower than the stated value yielding a net benefit for the employer. Furthermore, this value does not capture the improved productivity of workers as a result of reduced absenteeism as well as the savings from reduced turnover of employees that are likely to result from providing a daycare service at the workplace.

The value of a daycare service was most pronounced for respondents who either had children under the age of 4 (and as such would need a daycare service) or respondents who held a master's degree. Moreover, contrary to expectations and common beliefs, male respondents valued the daycare service at their workplace at JD 49.8 per employee per month.

In light of the aforementioned results, the paper puts forward several choices for the appropriate public policy response. Given that childcare services can be thought of as a public good, the government must be willing to undergo a partnership with the private sector to provide incentives for the provision of daycare services. These incentives include, but are not limited to, tax exemptions and/or direct cash transfers such that the government incurs a portion of the cost of establishing and running daycares at the workplace.

## ملخص تنفيذي

يعاني الاقتصاد الأردني من تدني مشاركة المرأة في سوق العمل مقارنة بمشاركة الرجل على الرغم من التقارب في مستويات التعليم ما بين الجنسين، حيث بلغت مشاركة المرأة في سوق العمل 13.3% في عام 2015 مقارنة مع 60% للرجل في نفس العام. وتشير الدراسات إلى أن الفائدة المتأتية من إغلاق فجوة المشاركة في سوق العمل بين الجنسين قد تصل إلى حوالي 46% من قيمة الناتج المحلي الإجمالي. ولذلك، بذلت ولا زالت، جهود عدة لزيادة نسبة مشاركة المرأة الاقتصادية.

تشير الأدبيات الاقتصادية إلى أن عبء رعاية الأطفال يعد من أهم العقبات أمام زيادة مشاركة المرأة في سوق العمل. وتبين دراسة للمجلس الأعلى للسكان أن حوالي 45% من النساء اللواتي ينسحبن من سوق العمل يعزبن ذلك إلى ظروف عائلية وعبء رعاية الأطفال. ولمعالجة هذه المشكلة، تشير المادة 72 من قانون العمل الأردني رقم (8) لسنة 1996 وتعديلاته إلى وجوب توافر خدمة رعاية الأطفال في موقع العمل عند توافر خصائص معينة في موقع العمل حيث تنص المادة أنه "على صاحب العمل الذي يستخدم ما لا يقل عن عشرين عاملة تهيئة مكان مناسب يكون في عهدة مربية مؤهلة لرعاية اطفال العاملات الذين تقل اعمارهم عن اربع سنوات، على ان لا يقل عددهم عن عشرة اطفال".

مع ذلك، عند معاينة تطبيق المادة 72 على أرض الواقع من قبل حملة صداقة-نحو بيئة عمل صديقة للمرأة، ظهرت العديد من العقبات أمام تحقيق الهدف الأساسي من المادة وهو رفع مشاركة المرأة الاقتصادية، التي أدت في بعض الأحيان إلى عدم إقبال أصحاب العمل على توفير خدمة رعاية الأطفال في موقع عملهم لتجنب الامتثال للمادة 72 من قانون العمل. وبناء عليه، تسعى هذه الدراسة إلى تقديم فهم أفضل لرغبات العاملات والعاملين بالنسبة لخدمات رعاية الأطفال بشكل خاص وخصائص بيئة العمل الأمثل بالنسبة بشكل عام. إضافة إلى ذلك، تضع هذه الدراسة قيمة رقمية وضعها الموظفات والموظفون على خدمة رعاية الأطفال في موقع العمل، وتقدم مقترحات على بعض السياسات العامة الملائمة التي تنسجم مع نتائج الدراسة بهدف تحفيز مشاركة المرأة في سوق العمل.

وتماشياً مع الأدبيات الاقتصادية، استخدمت هذه الدراسة منهجية أسلوب التقييم المشروط (Contingent Valuation Method) لتحديد قيمة خدمات رعاية الأطفال في مواقع العمل من قبل العاملات والعاملين. وأجريت هذه المنهجية عن طريق استبيان إلكتروني ضم أسئلة تهدف إلى استطلاع المستجيبين حول الخصائص المفضلة لهم في موقع العمل وخدمة رعاية الأطفال. كما اشتمل الاستبيان على أسئلة تهدف إلى استطلاع رأي المستجيبين عن القيمة النقدية التي هم على استعداد لدفعها من أجل تمويل إنشاء خدمة رعاية أطفال في موقع عملهم وذلك على شكل سيناريو افتراضي يتماشى مع أفضل الممارسات العالمية لهذه المنهجية.

اخترنا في هذه الدراسة أن نوجه الاستبيان إلى قطاع الاتصالات كدراسة حالة وذلك لارتفاع نسبة النساء العاملات في هذا القطاع (مقارنة مع قطاعات أخرى) إضافة إلى المعرفة الإلكترونية لموظفات وموظفي هذا القطاع بتقنيات تكنولوجيا المعلومات المختلفة والتي سهلت من عملية جمع نتائج الاستبيان إلكترونياً.

تبين هذه الورقة أن العاملات والعاملين في قطاع الاتصالات، وضمن العينة التي شملتها الدراسة، يضعون قيمة عالية على خدمات رعاية الأطفال في موقع عملهم. إضافة الى ذلك، فإن العاملات والعاملين أختاروا خدمات رعاية الأطفال لتكون السمة الأهم والأكثر تفضيلاً التي تميز بيئة العمل مقارنة بسمات أخرى مثل إجازة أمومة مدفوعة أجر أطول من المنصوص عليها قانونياً، والتكافؤ بالأجور بين الجنسين، وساعات العمل المرنة.

كما وجدت الدراسة أن العاملات والعاملين يفضلون وجود خدمة رعاية الأطفال قرب موقع العمل وتعمل بنفس ساعات الدوام للعاملة والعامل، وتتمتع بمستوى نظافة وسلامة ممتاز. الأمر الذي يعزز الاستنتاج السابق بأن العاملات والعاملين يفضلون وجود خدمة رعاية الأطفال في موقع عملهم.

غالبية المستجيبات والمستجيبين أشاروا إلى أن القيمة النقدية التي هم على استعداد لوضعها لخدمة رعاية الأطفال في موقع عملهم هي ما بين 51 دينار و 100 دينار للفرد الواحد شهرياً، حيثقدر متوسط هذه القيمة بمعدل 52.2 دينار للفرد الواحد شهرياً أو ما يعادل 627 دينار لكل موظفة وموظف سنوياً. تمثل هذه القيمة فائدة مباشرة لصاحب العمل ويمكن اعتبارها بمثابة زيادة غير نقدية على أجور العاملين أو منفعة غير نقدية لموظفيها. نتيجة لذلك، وبشرط وجود سياسات عامة ملائمة، يمكن لصاحب العمل، أن يجني فائدة من توفير خدمة رعاية الأطفال في موقع العمل إن كانت تكلفة الرعاية للطفل الواحد أقل من القيمة أعلاه. ومن المهم الإشارة إلى أن هذه القيمة لا تعكس الفوائد المتأتية من زيادة إنتاجية الموظفين والموظفات كنتيجة حتمية لانخفاض نسبة الغيابات، كما أن الرقم لا يعكس الوفورات المالية المتأتية من انخفاض معدل الدوران الوظيفي نتيجة لتوفير خدمة رعاية الأطفال في موقع العمل.

وجاءت القيمة المالية التي قدرها المستجيبات والمستجيبون على خدمة رعاية الأطفال في موقع العمل أعلى لدى العاملات والعاملين الذين لديهم أطفال تحت سن الرابعة (والذين هم بأمر الحاجة الى خدمة رعاية الأطفال)، كما جاءت مرتفعة لدالعاملات والعاملين الحاصلين على درجة الماجستير. وعلى عكس التوقعات، فإن العاملين الذكور وضعوا قيمة 49.8 دينار لكل موظف شهرياً على وجود خدمة رعاية الأطفال في موقع عملهم.

في ضوء هذه النتائج، تضع الدراسة بعض المقترحات للسياسات العامة الملائمة لتحفيز مشاركة المرأة في سوق العمل باعتبار أن خدمة رعاية الأطفال هي منفعة عامة. وبناء عليه فإن الحكومة عليها أن تبدي استعداداً للتعاون مع القطاع الخاص لتوفير حوافز لضمان توفر خدمات رعاية الأطفال بما يسهل مشاركة المرأة في سوق العمل. هذه الحوافز المقترحة تشمل الإعفاءات الضريبية أو التحويلات النقدية المباشرة لصاحب وصاحبة العمل لتوفير خدمة رعاية الأطفال في أماكن العمل من منطلق وجوب تحمل الحكومة لجزء من التكلفة المترتبة على أحاب العمل نتيجة لإنشاء وتشغيل مكان لرعاية الأطفال في موقع العمل.

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# 1. Introduction

## 1.1 Scope of the Report

Obstacles against higher participation of women in the labor market are numerous. However, economic literature often sites the burden of childcare as one of the main reasons for women dropping out of the labor force. Given Jordan's abysmal labor force participation rate for women, which is one of the lowest globally, public efforts have been made to dismantle the barriers against women's participation in the economy; among them were legal provisions that provide a friendlier working environment of women such as Article 72 of Jordan's Labor Law.

Article 72 of Jordan's Labor Law provides the legal basis stipulating the conditions upon which an establishment, employing more than 20 female employees bearing 10 children among them all under the age of four years old, must establish a daycare at its workplace. However, after four years of Sadaqa's monitoring of how Article 72 was implemented by Jordan's private sector, multiple issues emerged, of which:

- Some companies do not recruit women, or women who are married and others stop recruiting women at a number below the legal threshold triggering the legal obligation to provide a daycare service at the workplace.
- Companies regard daycares at the workplace as an additional burden on finances and resources and not among the company's main line of business.
- Companies prefer to give cash benefits for daycares and argue that a conditional cash payment is more beneficial to working mothers.
- The low fine against violating Article 72, which ranges between JD 300 and JD 500, does not provide an adequate incentive for companies to establish a daycare service. Furthermore, multiple managers and directors have stipulated that providing a daycare at the workplace has no value upon the company itself.
- Around 97% of companies operating in Jordan are classified as small or medium enterprises (SMEs)<sup>1</sup> and as such Article 72 would only apply to a small percentage of companies thereby undercutting the goal of stimulating employment opportunities for women in Jordan.

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<sup>1</sup> Oxford Business Group, "Jordan: Finding financing for SMEs", February 2012.  
News Article: <http://www.oxfordbusinessgroup.com/news/jordan-finding-financing-smes>  
Accessed: July 2016.

Given the aforementioned challenges, a need arose to research the nature of the provision of daycare services at the workplace in Jordan. The telecommunications sector was selected as a case study given its high prevalence of women as a share of its employees as well as their technological literacy which assisted in the completeness of the survey responses collected electronically as part of this research.

## 1.2 Research Goals

The research paper will attempt to shed light on the preferences of employees for a daycare service at the workplace in particular and preferable workplace traits in general. Furthermore, this research will aim to place a numerical figure that quantifies the value employees place on having a daycare service at the workplace. This value is considered to be a non-financial benefit for employees of a given company as well as cost-savings, in the form of foregone salary increases, by the employer.

The paper will then provide a commentary on the implications of the analysis and the results with respect to Article 72 of Jordan's Labor Law and how it can be improved. Moreover, the paper will provide recommendations to encourage the provision of daycare services by the private sector through appropriate incentives and policies undertaken by the government.

## 1.3 Report Structure

The paper is segmented into 9 sections. Section 2 presents an overview of the status of women in Jordan's labor market. Section 3 reviews the previous economic literature on the value of daycares in the workplace as well as obstacles facing Jordanian women in the labor market. Section 4 provides the methodology utilized in this research.

In Sections 5 and 6 we provide an outline of the survey utilized in this research work and showcase the data collected, respectively. Section 7 presents on the analysis of the data collected. Section 8 provides a discussion of the research results in the context of its policy implications. Section 9 highlights areas for improvement in the research and its limitations.

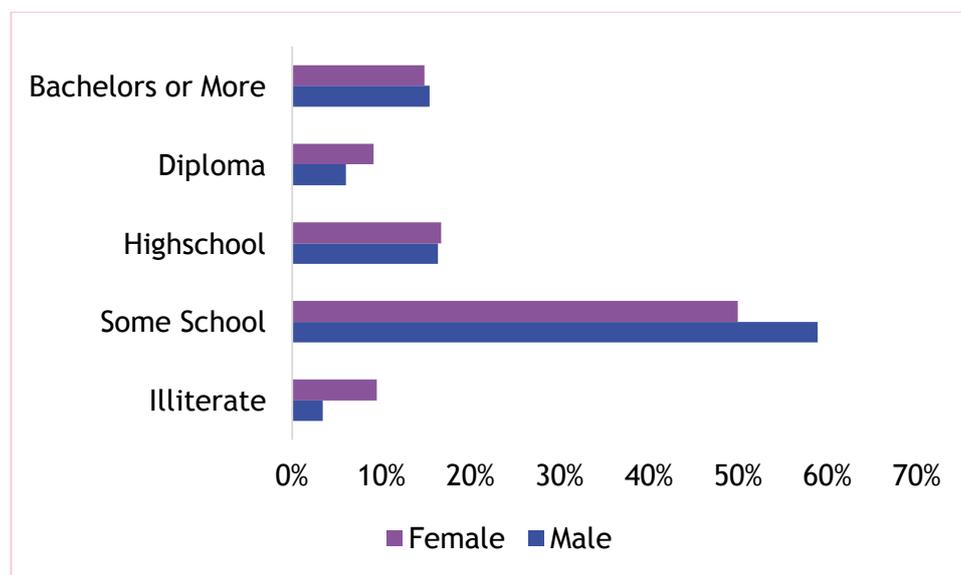
## 2. Women in Jordan's Labor Market

### 2.1 Overview

The aim of this section is to showcase the status of women in Jordan's labor market. The data for this section is from Jordan's Department of Statistics Employment and Unemployment annual survey for 2015.<sup>2</sup>

In general, Jordanian men and women roughly share the same breakdown by education level. Albeit men with some schooling education are larger relatively than women within the same group. This is offset by the fact that there are more women who either hold diplomas or who are illiterate relative to men. Despite the similarities that exist in education, a stark picture emerges when looking at the statistics of Jordan's labor force.

Figure 1 - Jordanians by Gender and Education



### 2.2 Labor Force Participation Rates

Despite similar education levels between men and women in Jordan, their participation in the labor force, and hence the formal economy, differs significantly. The overall labor force participation rate reached 36.7% in 2015.

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<sup>2</sup> Accessed through the web on June 15<sup>th</sup>, 2016.  
[http://www.dos.gov.jo/dos\\_home\\_a/main/linked-html/Emp\\_unEmp.htm](http://www.dos.gov.jo/dos_home_a/main/linked-html/Emp_unEmp.htm)

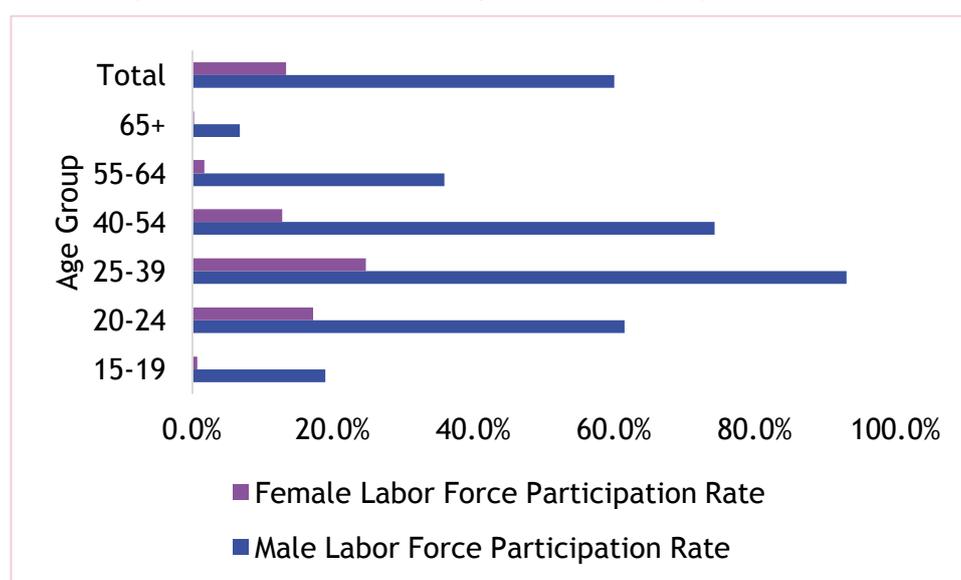
However, the male labor force participation rate amounted to 60% compared to the 13.3% equivalent rate for women.<sup>3,4</sup>

As shown in Figure 2, men have higher labor force participation rates compared to women throughout all age groups. Furthermore, both men and women reach the peak of their economic participation between the ages of 25 and 39 whereby men participate at a rate of 93% compared to 24.7% for women.

The Labor force participation rate, however, starts to decline more aggressively for women compared to men. Comparing the age groups 25-39 and 40-54 years' old, we note that the male labor force participation rate drops by approximately 20%. The female labor force participation rate drops at a more aggressive rate of 48%.

As such, the issue of weak labor force participation by women is evident throughout all age groups. However, all gains made by women in the age bracket of 25 to 39 years' old are eroded after the age of 40. Men, on the other hand, enjoy strong labor force participation rates after the age of 40.

**Figure 2 - Labor Force Participation Rates by Age and Gender**



<sup>3</sup> Department of Statistics, Employment and Unemployment Survey, 2015.

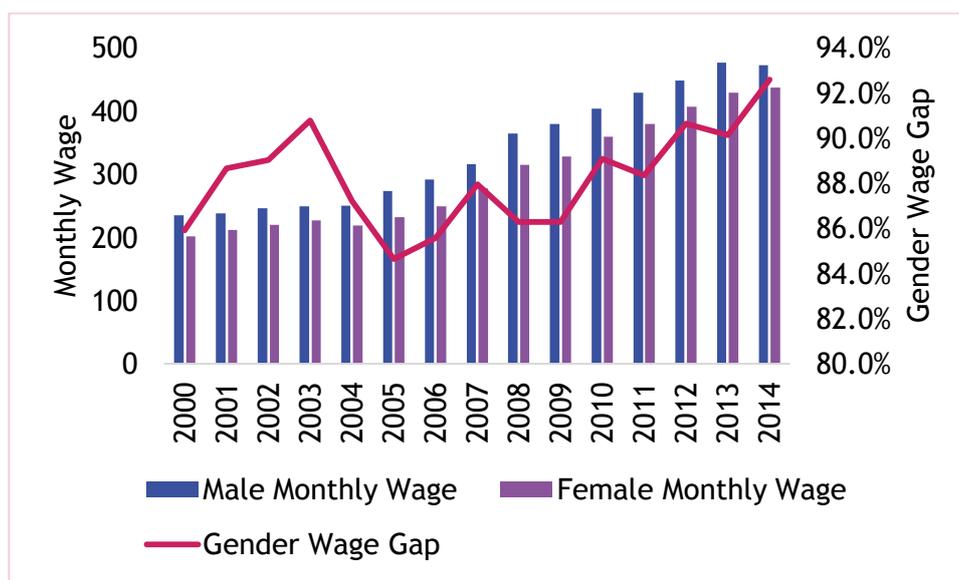
<sup>4</sup> The Labor Force Participation Rates, as calculated by Jordan's Department of Statistics, are calculated for the people aged between 15 and 64 years' old. Quoting the participation rate for women, given this age group, significantly underestimates women's participation in the labor force as women aged between 15 and 19 years' old are enrolled in the educational system and thus do not participate in the workforce (the female LFP for that age group is 0.7%). If the 15-19 years' old age group is discounted from the overall calculated, men's and women's labor force participation rates rise to 67.9% and 15.5% respectively for the age group 20-64 years' old.

## 2. 3 Wages and Productivity

Figure 3 below shows the average monthly wage for men and women between 2000 and 2014. Moreover, the figure shows the Gender Wage Gap, expressed as the relative value of the female monthly wage relative to the men's. The figure shows that, overall, the gender wage gap has been decreasing in Jordan as women earned roughly 93% of what men earn in 2014 compared to 86% in 2000.

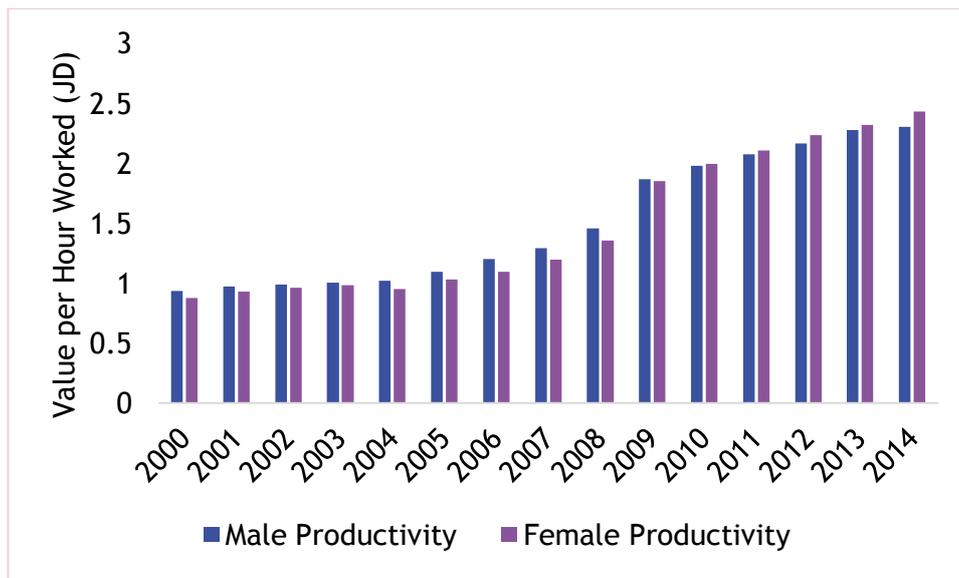
Female wages, however, have enjoyed a faster increase overall relative to men. In the period considered, female monthly wages increased on average 5.7% per year compared to 5.1% per year for men. When considering the average number of hours worked, women were enjoying growing wages with decreasing number of hours worked per month. These two movements resulted in female productivity overtaking that of men's in 2010.

Figure 3 - Gender Wage Gap: 2000 to 2014



As Figure 4 below shows, the productivity of both men and women, expressed in JD per hour worked, have steadily increased since 2000. Although women's productivity was 93.7% that of men's in 2000, their productivity grew at a faster rate, 7.6% per year on average, compared to the 6.7% growth in the productivity of men in that period. Given the difference in the rate of growth, women's productivity overtook that of men's in 2010 and have been steadily improving since then.

Figure 4 - Gender Productivity Disparity



## 2. 4 Unemployment Levels

In 2015, the total unemployment rate was 13%. However, in a similar manner to the labor force participation rate data, men’s unemployment amounted to 11% which was less than half of women’s at 22.5%.<sup>5</sup>

Unemployment rates by gender and level of education paint a much clearer image than the simple difference in unemployment rates between men and women. As shown in Figure 5, the unemployment rate for women steadily increases as a woman obtains higher and higher levels of education. Men, on the other hand, have a relatively stable unemployment rate regardless of the level of education.

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<sup>5</sup> Department of Statistics, Employment and Unemployment Survey, 2015.

**Figure 5 - Unemployment Rates by Gender and Education**

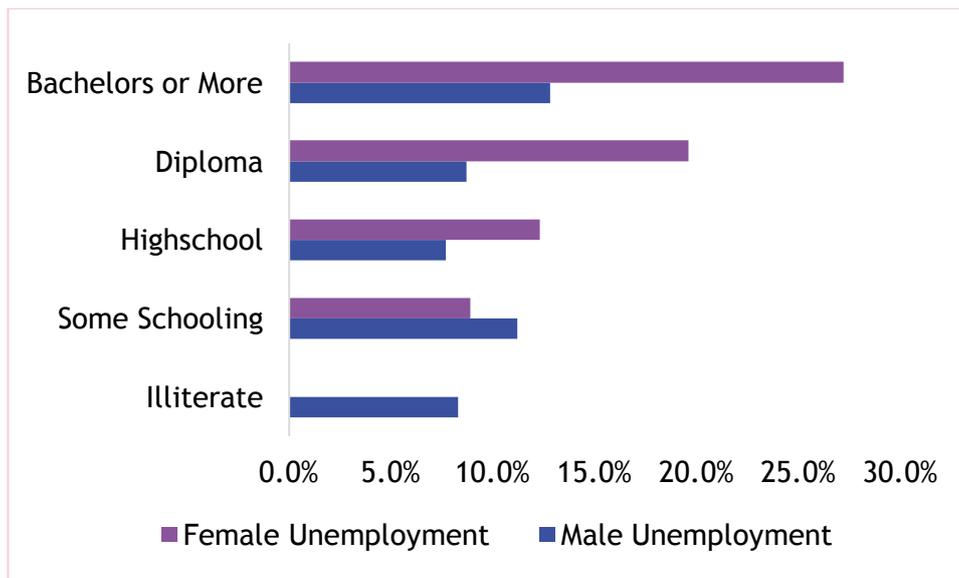


Table 1 shows the composition of the unemployed by gender and education level. The majority of unemployed men had some schooling. However, the vast majority of unemployed women held a bachelor degree or more.

**Table 1 - Composition of Unemployment by Gender and Education Level**

<u>Education Level</u>	<u>Male</u>	<u>Female</u>
Illiterate	0.7%	0.0%
Some Schooling	60.8%	4.7%
High school	8.1%	3.2%
Diploma	6.0%	16.6%
Bachelors or More	24.4%	75.5%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

Given the structure of the unemployment rate and the distribution of the unemployed by gender and education, Jordan’s labor market is currently punishing women in general and highly education women in particular. Such behavior is clearly unsustainable given that the cost of Jordan’s low participation rate for women was estimated 46% of Jordan’s GDP in 2013 (Jordan Strategy Forum, 2015).

### 3. Literature Review

#### 3.1 Maximizing the Participation of Women in the Labor Force

The theoretical choice for women to join or re-enter the workforce lies in the understanding of the costs and benefits associated with such a decision. Fundamentally, a woman would, in theory, compare the returns of household work relative to the returns to working in most societies. The two fundamental factors driving those returns are the number of kids for the former and the level of education for the latter.

In Jordan, more women are becoming more educated over time as only 5.8% of all women held bachelor degrees in 2001 but this share increased to reach 14.1% in 2013.<sup>6</sup> Furthermore, the fertility rate decreased from an average of 4 births per woman to 3.5 births over the same period. As such, structural changes overtime is moving in favor of increasing the participation rate for women in the workforce. However, data from Jordan's Department of Statistics shows that the participation rate for women has been declining, or stagnant at best, since 2010. As such, it becomes increasingly important to explore what are the factors that impede the participation rate of women in the workforce and what are the public policies that can be adopted to increase their participation in the economy.

In a study of the women participation in Europe, Christiansen et al. finds that, for women, the decision to work is not simply a matter of personal choice. Public policies impacting the decision making process could affect the incentives to take up work for a woman. For example, one of the major factors behind the consideration of joining the workforce for a woman was the tax policy treatment of a family's household income (Christiansen et al., 2016).

The paper finds that, in most countries, adding a second earner to the household's combined income would likely subject the household to a higher marginal tax rate thereby reducing the incentive for some women to join the workforce. However, the paper finds that public policies aiming at expending tax revenues on child care services and early childhood education programs had a significant impact on the likelihood of women returning to the labor force.

Fernandez finds that gender attitudes or beliefs about women's role in society are also important, as they determine the disutility of market work from violating personally held beliefs or social norms (Fernandez, 2013).

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<sup>6</sup> Jordan Department of Statistics: Gender Statistics Web Portal.

Considerable research finds that higher participation rates for women have tremendous value to the economy. Christiansen et al. finds that having more women in the labor force paves the way for increased diversity in senior corporate positions and better firm performance (Christiansen et al., 2014). In Jordan, the IFC finds that although women represent 16% of Jordan's labor force, they hold only 6% of board positions. Moreover, the study finds that companies with a strong female presence on their boards outperformed those without through a higher return on assets nearly triple of the companies with male-dominated boards (IFC, 2014).

Jordan Strategy Forum calculates that the foregone economic value from the low labor force participation rate of women in Jordan amounted to about 46% of Jordan's GDP in 2013; equivalent to JD 11 billion (Jordan Strategy Forum, 2015). Finally, Tzannatos (2015) argues that with the slow economic growth in Jordan's economy since 2008, and the burden of brain drain estimated at nearly half a million workers, it is an imperative to maximize the use of women labor in the economy.

### 3.2 Value of Daycare Services

The leading paper on the impact and value of daycare services at the workplace was written by Connelly et al. The paper utilizes the contingent valuation method to calculate the value of employer-sponsored-childcare (ESCC) to its employees. The paper's rationale behind the utilization of such a technique lies on the fact that ESCC services, like many environmental amenities which contingent valuation is most commonly used to study, could entail non-monetary benefits to its users, i.e. the company's employees (Connelly et al., 2004).

Through analysis of data collected from three companies operating in the United States, the study finds significant positive values placed on ESCC services among employees and especially among employees without young children. The study also finds that longer-term employees as well as recent hires have a larger valuation of ESCC services than the typical average valuation (Connelly et al., 2004).

The study finds that the majority of workers were willing to pay, on average, between USD 125 and USD 225 to subsidize the provision of a daycare service at their workplace implying that the average value for the daycare service to such employees has a theoretical minimum at the aforementioned range. Moreover, given such values, the study finds that providing a daycare service at the workplace is profitable for the companies analyzed as such a value translates directly into reduced costs through foregone salary raises as well as improved morale and productivity among employees. The research concludes that among the companies studied, each company could save between USD 150,000 and USD 200,000 per year (Connelly et al., 2004).

### 3.3 Why Jordanian Women Leave the Workforce

The low participation rate of women in Jordan's workforce prompted multiple studies aiming at explaining this phenomenon. The Higher Population Council in Jordan conducted a study, using data from the Social Security Corporation, to investigate the reasons why Jordanian women leave the workforce (HPC, 2015). The study finds that:

- Over half of the women who left the workforce were between 25 and 34 years' old.
- About 80% of the women who left the workforce were married; a third of whom were married for less than two years.
- Most women who left the workforce had an education level of high school and above.
- The majority of women who left the workforce, 86%, worked in the private sector, compared to 9% who worked in the public sector.
- The major reason behind women leaving the workforce was found to be family circumstances as well as the burden of childcare which were the case for 45% of all the women who left the workforce.
- As for working women with children, 54% reported that they relied on their parents to support them with childcare while only 22% reported that they utilized a daycare service for their childcare needs.

### 3.4 Addition to the Literature

This paper adds to the existing literature by investigating the preferences of employees towards daycare services as well as the value of such services for employees. The issue of childcare is shown to be an important determinant of women leaving the workforce. As such, there is a need to promote a better understanding of how daycare services play a role in the decision making process of women when considering joining or returning to the labor force.

This paper compliments the paper by Connelly et al. by carrying out this research for a specific industry within Jordan. To the best of the knowledge of the author, this paper is the first of its kind in the country and in the region.

## 4. Methodology

### 4.1 Introduction

Our aim through this methodology section is to develop a conceptual model to quantify the value of daycare services for a typical household or an economic agent. The value of any good or service is typically observed in exchanges through the market mechanism whereby buyers and sellers would exchange a good or a service in exchange for a specified amount of money.

In the market mechanism, the price paid by the buyer is said to represent a minimum on the value of that good or service to the buyer. For if the price paid by the buyer were higher than the value of that good or service to the buyer, the buyer would incur a net loss and as such would not have made that choice under the assumption of the rationality of the buyer. Therefore, as long as the price of a good or service is lower than the value of that good or service to the buyer, the buyer would make the choice to purchase that good or service. If those choices are freely observable with complete information, the value of goods and services to buyers can be found.

### 4.2 Theoretical Model

Suppose a household consumes a set of  $n$  goods  $X = \{x_1, x_2, \dots, x_n\}$  whereby any good in the set  $X$  is denoted by  $x_i$  (i.e.  $i \in \{1, 2, \dots, n\}$ ). The household earns an income  $Y$  in every period. Moreover, the household expends all of its income in every period and thus does not save a portion of his/her income today to spend in future periods.<sup>7</sup> The household is subject to a set of market prices  $P = \{p_1, p_2, \dots, p_n\}$  such that  $p_i$  is the price of  $x_i$ .

The household has a utility function  $U(X) = U(x_1, x_2, \dots, x_n)$  such that:

$$\frac{\delta U}{\delta x_i} > 0$$

This condition stipulates that utility is increasing with increases in goods consumed.

Since the household does not save, all of the household's income is expended on goods  $X$  in every period in accordance with the budget constraint:

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<sup>7</sup> This assumption is made for the sake of simplicity of the model. Temporal saving choices are irrelevant for our model and as such eliminated. A model can be constructed with temporal saving choices incorporated albeit with no difference to the conclusion of the model.

$$Y = \sum_{i=1}^n p_i x_i = p_1 x_1 + p_2 x_2 + \dots + p_n x_n$$

The household maximizes their utility  $U(X)$  subject to their budget constraint. As such the household chooses quantities  $\{x_1, x_2, \dots, x_n\}$  to consume such that it brings about the most utility or satisfaction to the household subject to the set of market prices  $P$  and their income  $Y$ . This expenditure behavior is denominated as an expenditure function:

$$E(P, X, U) = E(P, X, U(X))$$

The expenditure function  $E$  calculates the amount of goods consumed  $X$  given a set of market prices  $P$  and a household utility function  $U(X)$ .

The household seeks to purchase a daycare service  $D$  in exchange for a price  $p_D$ . We assume that there are no constraints on the price setting mechanism by the household such that  $p_D$  reflects the value of the daycare service to the household.

Note: we denote the phase with no daycare services purchased by  $D = 0$  and the phase with a daycare service purchase by  $D = 1$ . We further assume that income  $Y$  has not changed.

After the household acquires the daycare service, with no change to its income  $Y$ , the household would have to choose different quantities of the goods  $X$  because his expenditure function now produces a different set of quantities purchased given that the households income decreased by  $p_D$ . We denote the revised quantities purchased by  $X' = \{x'_1, x'_2, \dots, x'_n\}$ .

We seek to define the price  $p_D$  as the price whereby the household is indifferent between acquiring the daycare service or not. As such,  $p_D$  would be the price that equals the value of the daycare service to the household given their preferences  $U(X)$ . Alternatively:

$$U(X': D = 1) = U(X: D = 0)$$

Each set of choices is represented by the following expenditure functions:

For  $D = 0$ :

$$Y = E(P, X, U(X))$$

For  $D = 1$ :

$$Y - p_D = E(P, X', U(X'))$$

Combining both expenditure functions yields the following relationship:

$$p_d = E(P, X, U(X)) - E(P, X', U(X'))$$

Given the equation above,  $p_D$  is thus quoted as the ‘willingness to pay’ (WTP) of the household such that his/her utility is unchanged between states  $D = 1$  and  $D = 0$ .

### 4.3 Revealed vs. Stated Preferences

In a market exchange, it is possible to observe the prices and quantities purchased by buyers of a given good or service. As such, economic agents would ‘reveal’ their preferences, and consequently their perceived value of a good or service, through purchasing decisions and choices in a market exchange. Revealed preferences, as such, is a method of analyzing choices made by individuals in a market place to extract the value of a good or service for a particular individual or a group through formulating an understanding of the decision-making mechanism by the individual or group (i.e. their utility-maximizing decision framework).

The use of revealed preferences lies upon the existence of an observable market for a good or service whereby purchasing decisions and choices can be studied and analyzed to extract the value of a particular good or service. In the case of daycare services, it is difficult to resort to the use of revealed preferences due to the difficulties of observing consumer decisions, especially in Jordan. As such, we resort to the use of stated preference models.

Stated preferences is a methodology used to understand the choices made by individuals in experimental settings and not through market mechanisms. In such settings, consumers (or economic agents in general) are asked to state their preferences via their choices through questions that ask respondents to state their ‘willingness to pay’ to acquire a good or service or preserve it.

These experimental settings are usually conducted via a survey that is disseminated to a group of individuals of interest. These individuals are then asked questions that ask them to state the value they place on a particular good or service. This methodology is known as Contingent Valuation (CV) which stems directly from the stated preferences model.

### 4.4 Contingent Valuation Model

The Contingent Valuation Model (CVM) is a survey-based economic technique that is used to extract or calculate the value of a good or service that is not typically exchanged in a market. The CVM is most commonly used to value non-market goods such as environmental amenities or the impact of contamination. Given that the provision of daycare services at the workplace is not a service exchanged on a market, we resort to the use of CVM to estimate the value of such services following Connelly et al., i.e. the value  $p_D$  which is calculated as the Willingness to Pay (WTP) by the respondent. Furthermore, characteristic questions will be

utilized to explore the driving factors behind the determination of  $p_D$  or WTP through econometric analysis.

### Characterizing the Regression Model:

Let  $Z = \{z_1, z_2, \dots, z_m\}$  denote the list of  $m$  independent variables (or characteristic variables) where  $z_j$  denotes an arbitrary element in  $Z$ . Suppose we have  $W$  observations. The value  $p_D$  for the respondent  $w \in W$  will thus be explained through the following equation:

$$p_{D_w} = \alpha_w + \sum_{j=1}^{j=m} \beta_{j_w} z_{j_w} + \epsilon_w$$

The coefficient  $\beta_j$  is of interest for the analysis in this report as it shows the impact of the independent variable  $z_j$  on the value  $p_D$ . If  $\beta_j > 0$  then  $z_j$  is correlated with an increase in  $p_D$  while if  $\beta_j < 0$  then  $z_j$  is correlated with a decrease in  $p_D$ . The aforementioned equation will be estimated through the use of the appropriate independent variables, listed in Section 6.4, as shown in Section 7.

## 5. Survey

### 5.1 Structure

A survey was constructed and disseminated online, through Google Forms, to a sample group of employees from two telecommunications companies in Jordan: Zain and Orange. The survey was comprised of three sections:

1. Qualitative preference questions
2. Contingent Valuation section
3. Characteristic questions section

The set of qualitative questions aimed to capture the different preferences that respondents have towards non-financial benefits offered by the workplace such as flexible working hours and daycare services as well as capture the respondents' preference of daycare services. The respondents were further asked to state, numerically, their preference for the provision of a daycare services at their workplace on a scale from 1 (least important) to 5 (most important).

The Contingent Valuation section was designed in accordance with the NOAA<sup>8</sup> Guidelines on Contingent Valuation (Arrow et al., 1993). This section contains a narrative describing a hypothetical company that is considering offering a daycare services to its employees. The daycare service was described to match with the daycare provision in Article 72 of Jordan's Labor Law No. 8 of 1996 and its amendments.

The company was described as seeking to subsidize the cost of providing the daycare through a fixed amount paid by each employee (regardless of whether or not they use the service). The company would then determine such an amount through a referendum whereby all employees will abide by the choice of the majority in terms of the amount to be paid by each employee. If most employees chose not to pay any amount, the daycare service would not be provided. As such, in accordance with NOAA guidelines, this question was designed in a referendum style. Finally, the respondents were offered a space whereby they can input answers to elaborate upon their choices when applicable.

The third and final section included characteristic questions that aimed to capture the gender, age, education level, marital status, and the number of children for each respondent.

The full text of the survey is reported in Annex 1 of this report.

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<sup>8</sup> National Oceanic and Atmospheric Administration in the United States.

## 5.2 Limitations on Survey Design and Dissemination

The survey design was subject to the following limitations:

- Due to a specific request made by the participating companies, a characteristic question on the income level of the respondent was omitted due to the confidentiality of such data. As such, the survey is unable to capture the income effects affecting the choices made by the respondent in accordance with the NOAA guidelines. This adverse effect was compensated for partially by stating that the employee in the CVM section of the survey earned an income of JD 1,000 per month.
- The survey was disseminated online, rather than abiding by best-practices to conduct the survey through personal interviews, due to cost limitations related to the scope of the study. Furthermore, an online dissemination of the survey was, as such, a preferable method given the selection of the telecommunications industry as a case-study given the technological literacy of the employees in that sector.

## 5.3 Dissemination

The survey was launched via Google Forms in two languages: Arabic and English. The survey collected responses during a period of two weeks from June 7<sup>th</sup> 2016 to June 21<sup>st</sup> 2016. The survey was communicated by Sadaqa to the human resources departments of the participating companies which were then passed along to their employees.

## 6. Data

### 6.1 Response Rate

The survey collected 98 responses with an average response rate of 4.2% as follows:

**Table 2 - Response Rate by Company**

<b>Company</b>	<b>Number of Responses</b>	<b>Number of Employees</b>	<b>Response Rate</b>
Zain	50	1,250 <sup>9</sup>	4.0%
Orange	48	1,100 <sup>10</sup>	4.4%
<b>Total</b>	<b>98</b>	<b>2,350</b>	<b>4.2%</b>

Given the design of the survey, each respondent answered every question and as such our sample for analysis consisted of all 98 responses.

### 6.2 Sample Characteristics

The resulting sample collected comprised of a minor majority of women whereby 56 respondents were female (or 57%) and 42 male respondents (43%).

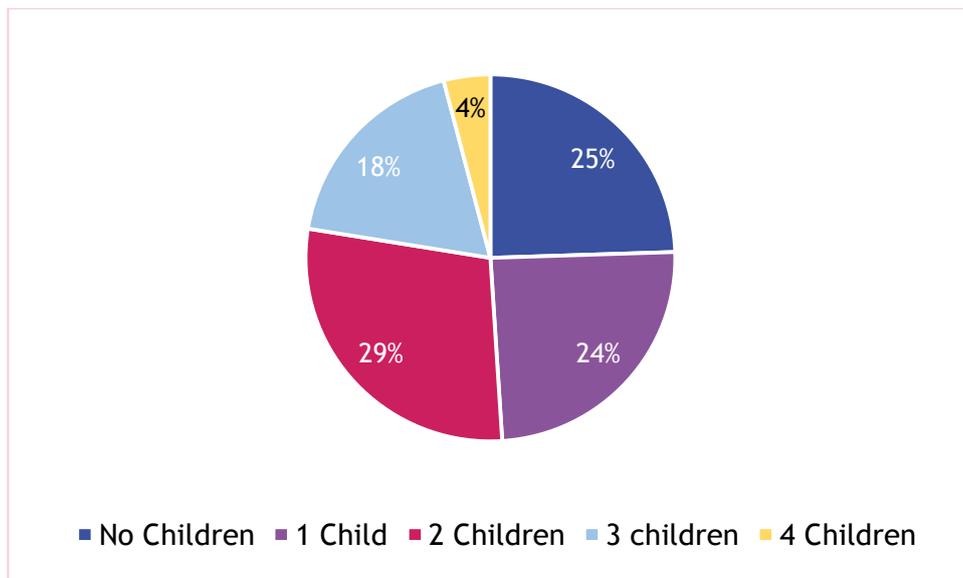
Figure 6 shows the breakdown of the respondents by number of children. We find that the largest share belonged to respondents who have two children with 28.6% of the sample. Respondents with no children or 1 child were equal in size at 24.5% each. Furthermore, of the 98 respondents, 43% reported that they have no children under the age of 4 while 57% reported that they have children under that age.

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<sup>9</sup> Number of employees of Zain was reported via an email exchange with the company staff.

<sup>10</sup> Number of employees of Orange was calculated through a LinkedIn search made on June 24<sup>th</sup>, 2016.

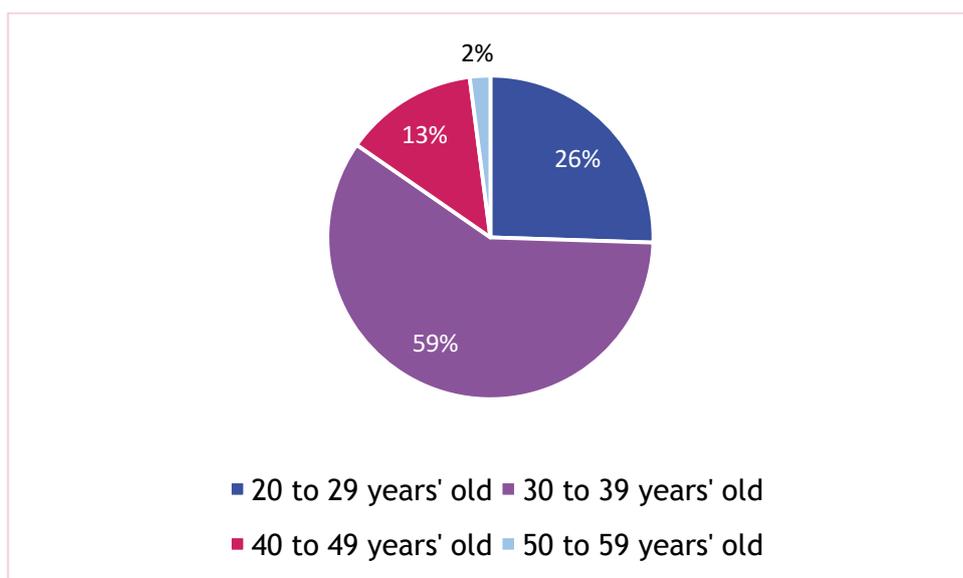
Figure 6 - Sample by Number of Children



The majority of respondents were married at 80.6% of the sample whereby the single respondents amounted to 17.3%. The remaining two respondents were either divorced or separated.

As for the sample's age characteristics, 59.2% of the sample comprised of individuals between the ages of 30 and 39 years' old. The second largest category were individuals aged between 20 and 29 years' old at 25.5%. Respondents aged between 40 and 49 years' old represented 13.3% of the sample while 2 respondents reported being between the ages of 50 and 59 years' old as shown in Figure 7.

Figure 7 - Sample by Age Group



Finally, 82.7% of the sample held a bachelor degree while 14.3% held a master's degree. There was 1 respondent who held a doctorate degree and 2 respondents with a technical diploma.

Annex 2 of this report showcases the detailed sample characteristics of the survey respondents.

### 6.3 Data Filtration

For the purposes of performing econometric analysis, seven responses were discounted from the analysis as these seven respondents held unique attributes that were not common across the group. These respondents were either the sole respondents who have a specific marital status (divorced or separated) or a specific education level (Doctorate degree or technical diploma) that were not common across all responses.

### 6.4 List of Variables

Question 5 of the survey (see Annex 1 for full text) asked the respondents about their willingness to pay for the provision of a daycare service at their workplace from different choices depicting different ranges of amounts to pay per month. The responses of this question are as such a categorical variable. A continuous variable was constructed from this question by calculating the average value from each bracket as follows:

**Table 3 - Conversion of the Categorical WTP Variable to a continuous one.<sup>11</sup>**

<b>Category</b>	<b>Average Value</b>
1 to 25 Jordanian Dinar per month	13
26 to 50 Jordanian Dinar per month	38
51 to 100 Jordanian Dinar per month	75.5
101 to 150 Jordanian Dinar per month	125.5
151 to 200 Jordanian Dinar per month	175.5

The variables and filtered values used in the analysis are as follows:

- **WTP - Continuous:** A continuous variable that was generated from the categorical WTP variable as showcased in Table 3 above.
- **WTP - Categorical:** A categorical variable that was compiled from the answers of Q5:
  - 0: JD 0 per month
  - 1: 1 to 25 JD per month
  - 2: 26 to 50 JD per month

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<sup>11</sup> An additional category of 201 Jordanian Dinar per month or more was provided in the survey. However, no respondent chose that category and as such was dropped out of the analysis.

- 3: 51 to 100 JD per month
  - 4: 101 to 150 JD per month
  - 5: 151 to 200 JD per month
- **Number of Children:** the number of children for each respondent.
  - **Daycare Importance:** the importance of having a daycare service at the workplace for each employee ranked on a scale of 1 (not important at all) to 5 (most important).
  - **Gender:** A binary variable whereby it takes on the value 1 if the respondent is female and 0 if the respondent is male.
  - **Children Under 4:** A binary variable whereby it takes on the value 1 if the respondent has any children under the age of 4 and 0 otherwise.
  - **Marital Status:** A binary variable whereby it takes on the value 1 if the respondent is married as 0 if the respondent is single.
  - **Age Group:** A categorical variable that quotes the age group of the respondent and has the following levels:
    - 0: Between 20 and 29 years' old
    - 1: Between 30 and 39 years' old
    - 2: Between 40 and 49 years' old
    - 3: Between 50 and 59 years' old
    - 4: Over 60 years' old

*Note: no responses were recorded for people aged over 60 years' old.*
  - **Education Level:** A binary variable whereby it takes on the value 1 if the respondent has a master's degree and 0 if the respondent has a bachelor degree.

## 6.5 Summary Statistics

The table below showcases the summary statistics of the sample group utilized for the regression analysis after discounting the aforementioned unique responses.

**Table 4 - Summary Statistics**

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>
WTP: Continuous	91	53.48	46.31	0.00	175.50
WTP: Categorical	91	2.19	1.29	0.00	5.00
Number of Children	91	1.44	1.14	0.00	4.00
Daycare Importance	91	4.65	0.60	3.00	5.00
Gender	91	0.56	0.50	0.00	1.00
Children Under 4	91	0.57	0.50	0.00	1.00
Marital Status	91	0.81	0.39	0.00	1.00
Age Group	91	0.85	0.61	0.00	2.00
Education Level	91	0.14	0.35	0.00	1.00

As seen in Table 4, the mean WTP across the filtered sample was approximately JD 53.5 per month or equivalently JD 642 per employee per year. As for the equivalent categorical WTP variable, a mean value of 2.19 shows that the largest category of respondents was willing to pay between JD 51 and JD 100 per month.

Furthermore, the following attributes can be noted from the table:

- On average, each respondent has 1.4 children
- 56% of the analyzed sample were female.
- 57% of the analyzed sample have children under the age of 4.
- 81% of the analyzed sample were married.
- 14% of the analyzed sample held master's degrees.
- The most common age group was the group between 30 and 39 years' old.
- With a mean value of 4.65 for the Daycare Importance variable, the majority of respondents held the belief that a daycare service is very important to them. Furthermore, no respondent held the belief that a daycare service is not important to them as the minimum value for this variable was 3 out of 5.

## 7. Analysis

### 7.1 Overview

The analysis of the data in this report is threefold:

1. The first component of our analysis is to showcase the sample's responses to the qualitative questions from the first section of our survey. These qualitative questions aim to capture the preferences of the sample towards different workplace attributes and different daycare attributes.
2. The second component of our analysis is to show different tabulated means of the willingness to pay variable by different characteristics either through a one-dimensional tabulation or a two-dimensional tabulation. The purpose of this analysis is to showcase the different values held by respondents with different characteristics.
3. The final section of our analysis is to explore the different factors that drive the value of the daycare service to the respondent. This analysis utilizes econometric analysis on three variables:
  - a. Regression on the continuous WTP variable.
  - b. Multinomial logistic regression on the categorical WTP variable.
  - c. Regression on the Daycare Importance variable.

### 7.2 Preferred Workplace Attributes

Respondents were asked to rank the following attributes on a scale of 'not important, indifferent, somewhat important, and very important':

- Presence of a daycare service at the workplace.
- Company policy guaranteeing equal pay for equal work between men and women.
- Company offers transportation services between the workplace and the respondents home.
- Company offers extended paid maternity leave beyond the 70 days stipulated by law.
- The company allows workers to work from home.
- The company offers flexible working hours.

Tables 5 and 6 show the percentage distribution of the 98 respondents by preference and by workplace trait.

As seen in Table 5, the presence of a daycare at the workplace was considered very or somewhat important by 87.8% of the respondents. A company affirmation of equal pay for equal work obtained roughly the same level of support among the sample whereby 84.7% stated that such a trait is very or somewhat important.

Transportation services to and from the workplace were considerably ranked lower by respondents relative to the two aforementioned traits as only 56.1% stated that such a service is very or somewhat important to them.

**Table 5 - Respondents Preference for Workplace Attributes: 1 of 2**

Category (% of Responses)	Daycare Presence	Pay Equity	Transportation Services
Very Important	34.7%	31.6%	24.5%
Somewhat Important	53.1%	53.1%	31.6%
Indifferent	5.1%	5.1%	17.3%
Not Important	7.1%	10.2%	26.5%

The table below showcases the remaining preference votes for the remaining three attributes: extended paid maternity leave (beyond 70 days), possibility of working from home, and flexible working hours. An extended paid maternity leave (beyond the 70 day stipulated by law, were considered very or somewhat important by 85.7% of the respondents. The possibility of working from home were considered as very or somewhat important by 63.2% of the sample. Finally, flexible working hours were considered somewhat or very important by 79.6% of the respondents.

**Table 6 - Respondents Preference for Workplace Attributes: 2 of 2**

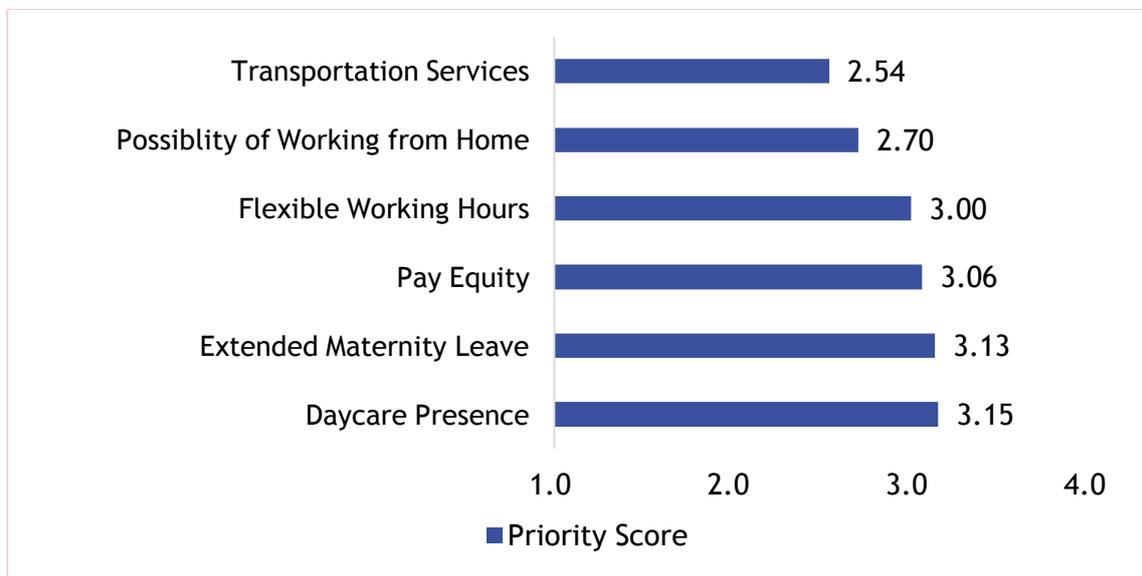
Category (% of Responses)	Extended Maternity Leave	Possibility of Working from Home	Flexible Working Hours
Very Important	36.7%	31.6%	35.7%
Somewhat Important	49.0%	31.6%	43.9%
Indifferent	5.1%	12.2%	5.1%
Not Important	9.2%	24.5%	15.3%

A comparison of the relative importance of each of the six aforementioned traits was made possible through the creation of a ‘Priority Score’ that aims to aggregate the distribution of the responses for each trait into a single score. The Priority Score is defined on a scale of 1 (not important) to 4 (very important). The score was calculated through a weighted average for each trait whereby the choices were given the following values:

- Not important: 1
- Indifferent: 2
- Somewhat important: 3
- Very important: 4

Figure 8 below shows the priority scores across the six different workplace attributes. Having a daycare presence was the most important attribute with a priority score of 3.2. At the bottom of the scale was transportation services to and from the workplace with a priority score of 2.5.

**Figure 8 - Priority Score for Different Workplace Attributes**



### 7.3 Preferred Daycare Attributes

Survey respondents were asked, in Question 4 of the survey, to choose the five most important attributes they find essential when considering a daycare service for their child. Respondents were allowed to choose up to five responses. In total, 477 choices were cast by the 98 respondents from a range of 13 daycare service traits as well as a 'not important' option.

Table 7 below shows the share of votes earned by each daycare service trait or attribute. On average, each trait received 7.1% of the total vote with a standard deviation of 5.1%. The three most important attributes for a daycare service (those with shares above 1 standard deviation of the mean) were:

1. Proximity to the workplace with 15.5% of the vote
2. Excellent hygiene and safety with 14% of the vote
3. Opening for the same working hours as a respondent's company with 13.2% of the vote

Other traits that were also considered to be important by the respondents were daycare services that offer education programs, have licensed staff, and has onsite medical staff. The least important attributes were home-based daycare services and the daycare's proximity to the home.

**Table 7 - Respondents Preferences for a Daycare Service**

<b>Daycare Trait</b>	<b>Share</b>
Proximity to the workplace	15.5%
Excellent hygiene and safety	14.0%
Opening for the same working hours as your company	13.2%
Offers excellent educational programs	10.3%
Certified or licensed staff	9.0%
Has an onsite medical staff	8.6%
Offers a playground space	8.4%
Certified as a professional daycare service from the government	7.8%
Offers childcare services for children under the age of 4 years' old	6.3%
Offering special services for children with special needs	2.3%
Center offering an open-door policy for parents	2.1%
Home based daycare service	1.3%
Proximity to home	1.0%
Not Important	0.2%
<b>Total</b>	<b>100.0%</b>

\*Share represents the trait's share of 477 votes cast by 98 respondents

## 7.4 Willingness to Pay by Characteristic

Willingness to pay values are presented in tables 8 and 9 below for female and male respondents respectively. In each table, the different WTP values are presented for a particular characteristic under the leading gender category. Furthermore, each WTP value is shown relative to the survey average of JD 52.2 per employee per month (average is calculated for all 98 respondents). Detailed one-dimensional and two-dimensional tabulations of WTP by different characteristics is reported in full in Annex 3 of this report.

### Daycare Value for Female Respondents:

Female respondents, on average, valued a daycare service at the workplace at JD 54 per female employee per month or equivalently JD 648 per female employee per year. This value, or willingness to pay, for female respondents is 8.4% higher than the average value for males.

The value drivers for female respondents' willingness to pay where:

- An average value of JD 98.9 per female employee per month for those who held a Master's degree. This is 83% premium over the average value for female respondents is expected as highly educated employees can expect a

higher return on their education at the workplace. Therefore, being willing to pay such a high amount would still be beneficial for this subset given that it will be offset by likely higher wages as a result of their increased education.

- An average value of JD 65.3 per female employee per month for those who are between 30 and 39 years' old. This 20.9% premium over the female respondents' average can be attributed to the likely presence of children at that age group requiring a daycare service.
- An average value of JD 61.8 per female employee per month for those who have a child under the age of 4 years' old. This 14.3% premium over the female respondents' average can be attributed to the fact that most daycare services are suited best for children under the ages of 4 years' old as children older than that age are likely to be enrolled in the elementary school system.

The value draggers for the female subset were:

- Women in the age group 40 to 49 years' old as they placed a value of JD 32.9 per female employee per month equivalent to a 39.1% discount over the female respondents' average. This behavior can be attributed to the fact that the majority of women in that age group had no children under 4 years' old.
- Women in the age group 20 to 29 years' old as they placed a value of JD 38.7 per female employee per month equivalent to a 28.5% discount over the female respondents' average. This discount can be attributed to a significant share of women in that age group who have no children and are single that have significantly lower values attributed to the daycare service.
- Women who have no children under the age of 4 years' old as they placed a value of JD 44.5 per female employee per month equivalent to a 17.7% discount over the female average. This discount can be attributed to the fact that females in this category did not require daycare services at the time of taking the survey and as such placed a lower overall value.

**Table 8 - Willingness to Pay for Female Respondents by Characteristic**

<b>Female Categories</b>	<b>Average Willingness to Pay (JD Per Month)</b>	<b>Relative to Survey Average</b>
With no children	47.4	-9.2%
With at least 1 child	56.7	8.6%
Single	49.4	-5.4%
Married	55.2	5.7%
Bachelor Degree	47.5	-9.0%
Master Degree	98.9	89.5%
No children under 4	44.5	-14.8%
With children under 4	61.8	18.3%
20 to 29 years' old	38.7	-25.9%
30 to 39 years' old	65.3	25.1%
40 to 49 years' old	32.9	-37.0%
<b>Average for all Females</b>	<b>54.0</b>	<b>3.5%</b>

**Daycare Value for Male Respondents:**

Male respondents, on average, valued a daycare service at the workplace at JD 49.8 per male employee per month or equivalently JD 598 per male employee per year. This value, or willingness to pay, for male respondents is 7.8% lower than the average value for females.

The value drivers for male respondents' willingness to pay where:

- Males who hold a master's degree were willing to pay JD 100.5 per male employee per month. This value represents about double the male average value. It is worth to note that this value for male respondents was 1.6% higher than the value placed by women who hold master's degrees.
- Males aged between 20 and 29 years' old and between 30 and 39 years' old were willing to pay JD 54.1 and JD 53.8 per male employee per month representing premiums of 8.5% and 7.9% respectively over the male average. It is noted that the average value for males aged between 20 and 29 years' old was 39.8% higher than that of female respondents in the same age group. Conversely, men aged between 30 and 39 years' old valued a daycare service 17.6% lower than the equivalent group among female respondents.

**Table 9 - Willingness to Pay for Male Respondents by Characteristic**

<b>Male Categories</b>	<b>Average Willingness to Pay (JD Per Month)</b>	<b>Relative to Survey Average</b>
With no children	48.9	-6.3%
With at least 1 child	50.1	-4.0%
Single	48.0	-8.0%
Married	50.1	-4.0%
Bachelor Degree	42.2	-19.1%
Master Degree	100.5	92.5%
No children under 4	48.2	-7.7%
With children under 4	51.0	-2.4%
20 to 29 years' old	54.1	3.6%
30 to 39 years' old	53.8	3.1%
40 to 49 years' old	39.5	-24.3%
<b>Average for all Males</b>	<b>49.8</b>	<b>-4.5%</b>

### 7.5 Note on the Independent Variables:

As stated in Section 6 of this report, seven observations were dropped that contained unique values not shared commonly between other respondents for the purposes of performing econometric analysis on the data. These observations had characteristics that were unique to them in a given independent variable such as education (1 respondent with a doctorate degree) or age (2 respondents between the ages of 50 and 59 years' old). These low occurrences of such unique characteristics were dropped as they impeded the accuracy of the regression results. The filtered data used in the regression results are presented through the Summary Statistics table (Table 4 in Section 6).

### 7.6 Factors Driving Willingness to Pay

Following Connelly et al., factors that drive the value for daycare services at the workplace are determined through conducting regression analysis in two ways:

1. Regression of the continuous WTP variable using characteristic independent variables.
2. Multinomial logistic regression on the categorical WTP variable using characteristic independent variables.

Table 10 shows the results of a regression on the Continuous Willingness to Pay variable through the independent variables: Children under 4 years old, Gender, Marital Status, Age, and Education.<sup>12</sup> The regression results show that, overall, education was the only statistically significant variable at the 1% level when controlling for the presence of children under the age of 4 years' old, gender, marital status, and age. The coefficient on the education variable implies that, all other variables held constant, individuals who hold a master's degree value the daycare service in the amount of JD 56.8 per employee per month higher than individuals who hold only a bachelor degree.

Despite the lack of statistical significance of all other independent variables, positive coefficients on the variables children under the age of 4 years old, gender, and age show that individuals with these attributes hold a somewhat larger value for daycare services than individuals who do not.

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<sup>12</sup> Using an Analysis of Variance (ANOVA) test, the model overall was statistically significant at the 1% level with an F-score of 4.45

**Table 10 - Regression Results on Willingness to Pay (Continuous Variable)**

<b>Regression on Willingness to Pay (Continuous Variable)</b>	
<b>Independent Variable</b>	<b>Regression Coefficient</b>
Children under 4 years' old (Yes)	11.75 (10.93)
Gender (Female)	5.006 (9.105)
Marital Status (Married)	-1.787 (14.29)
Age: Between 30 and 39 years'	14.75 (10.39)
Age: Between 40 and 49 years	6.004 (16.19)
Education (Master Degree)	56.79*** (12.72)
Constant	27.67** (13.74)
Observations	91
R-Squared	0.241
Adjusted R-Squared	0.187
Mean Variance Inflation Factor	1.34
F-Score	4.45***

Standard Errors in parenthesis

\* significant at 10% level; \*\* significant at 5% level, \*\*\* significant at 1% level

The lack of statistical significance among many independent variables in the aforementioned regression implies the need to use a different approach to determining the factors that drive the value of daycare services at the workplace for a given individual. Table 11 show the results of a multinomial logistic regression conducted on the categorical willingness to pay variable.<sup>13</sup> The base case or reference level in the regression is the willingness to pay level of JD 51 to JD 100 per employee per month (which is the most prevalent among respondents). A commentary on understanding the coefficients of a multinomial logistic regression is provided in Annex 4 of this report.

<sup>13</sup> Conducting a Chi-Square Test showed that the model is statistically significant at the 1% level.

The results of the multinomial logistic regression provide a clearer understanding of the factors that drive the willingness to pay for respondents. Given a reference level of JD 51 to JD 100 per employee per month, the coefficients, representing the log-odds, show how likely a respondent is to move away from the reference level to a chosen level.

Looking at the case of respondents moving from the reference level to the level of JD 0, we see that the coefficient, or log-odds, on the children under 4 variable equals -2.47 and is statistically significant at the 5% level. This value indicates that it is extremely unlikely for a respondent with a child under 4 years' old to be willing to pay JD 0 for a daycare service in the workplace (in fact, the associated probability is only 7.7%<sup>14</sup>).

The majority of the respondents who chose to pay between JD 1 and JD 25 per employee per month are found to be single males holding a bachelor degree between the ages of 20 and 29 years' old. This is evident by the associated statistically significant constant value of 2.24 indicates that the aforementioned category is 90.4% more likely to pay JD 1 and JD 25 per employee per month rather than the base case of JD 51 to JD 100 per employee per month. Furthermore, be married males holding a bachelor degree between the ages of 20 and 29 years' old were less likely to pay between JD 1 and JD 25 per employee per month and more likely to pay an amount equivalent to the reference level given a coefficient of -2.95 on marital status which gives an associated probability of 5% of paying between JD 1 and JD 25 per employee rather than the reference level.

As for the category of JD 26 to JD 50 per employee per month, we find that respondents who have children under 4 years' old are less likely to pay the aforementioned amount relative to the reference level of JD 51 to JD 100 per employee per month. This is indicated by a coefficient of -1.24 (associated probability of 22%) that is statistically significant at the 10% level.

As for amounts higher than the reference level; i.e. amounts between JD 101 and JD 150 per employee per month and between JD 151 and 200 per employee per month, we find that respondents who hold a master's degree were 96% and 98.8% more likely (i.e. near absolute certainty) to pay those amounts respectively (corresponding to coefficient values of 3.18 and 4.37 respectively) relative to the reference level of JD 51 to JD 100 per employee per month.

All in all, the multinomial logistic regression shows that education is leading driver for higher willingness to pay for daycare services at the workplace. Moreover, respondents who have children under the age of 4 years' old are less likely to have

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<sup>14</sup> See Annex 4 for the equation on converting coefficients to their associated probabilities.

lower values for willingness to pay relative to the group average between JD 51 and J100 per employee per month.

Table 11 - Multinomial Logistic Regression on Willingness to Pay (Categorical Variable)

Multinomial Logistic Regression on Willingness to Pay (Categorical Variable)					
Independent Variable	Regression Coefficients				
	JD 0	1 - 25 JD	26 - 50 JD	101 - 150 JD	151 and 200 JD
Children under 4 years' old (Yes)	-2.477** (1.02)	-0.246 (0.879)	-1.240* (0.72)	-1.215 (1.628)	-0.0808 (1.583)
Marital Status (Married)	15.08 (1986)	-2.951** (1.352)	-0.0995 (1.394)	-4.061** (2.05)	-2.596 (2.189)
Education (Master Degree)	-16.58 (6,106)	0.995 (1.025)	-0.36 (1.287)	3.178** (1.502)	4.372*** (1.405)
Age: Between 30 and 39 years'	0.615 (1.262)	0.0149 (0.717)	0.085 (0.678)	1.188 (1.479)	15.25 (948.1)
Age: Between 40 and 49 years	1.359 (1.548)	1.277 (1.128)	0.492 (1.115)	4.169* (2.31)	2.119 (2499)
Constant	-15.48 (1986)	2.239** (1.1)	0.665 (1.265)	-0.159 (1.586)	-15.66 (948.1)
<i>Base Case: 51 - 100 JD; coefficients represent the log-odds for each independent variable</i>					
Observations	91	91	91	91	91
Likelihood Ratio Chi-Square Test	62.21***				
Pseudo R-Squared	0.2148				

Robust Standard Errors in parenthesis

\* significant at 10% level; \*\* significant at 5% level, \*\*\* significant at 1% level

## 7.7 Who Favors Daycares?

The Daycare Importance variable was generated by asking respondents to choose the value that represents the importance of the provision of a daycare service at their workplace on a scale from 1 (least important) to 5 (most important). Table 12 shows the results of a regression conducted on the Daycare Importance variable by our characteristic variables.

The results show that the presence of children under the age of 4 years' old significantly increases the perceived value of a daycare service at the workplace as it was expected and implied through the results in Section 7.6.

Despite the variable of age between 30 and 39 years' old and education having a significantly negative coefficient, it is noted that the values of these coefficients are not numerically significant. Given a value of the constant at 4.6, a respondent who belongs to the age group between 30 and 39 years' old, all other variables held constant, would have a predicted daycare importance value of 4.3. Furthermore, a respondent who holds a master's degree, all other variables held constant, would have a predicted daycare importance value of 4.3 as well. As such, these respondents who belong to the aforementioned age groups maintain a high regard or importance to the provision of daycare services at the workplace.

Table 12 - Regression on Daycare Importance Variable

Regression on Daycare Importance	
Independent Variable	Regression Coefficient
Children under 4 years' old	0.608*** (0.139)
Gender (Female)	0.175 (0.116)
Marital Status (Married)	-0.242 (0.181)
Age: Between 30 and 39 years'	-0.265** (0.132)
Age: Between 40 and 49 years	0.032 (0.206)
Education (Master Degree)	-0.291* (0.161)
Constant	4.597*** (0.174)
Observations	91
R-Squared	0.28
Adjusted R-Squared	0.23
Mean Variance Inflation Factor	1.34
F-Score	5.43***

Robust Standard Errors in parenthesis

\* significant at 10% level; \*\* significant at 5% level, \*\*\* significant at 1% level

## 8. Results & Policy Implications

### 8.1 Summary of Results

This paper has shown that employees within the telecommunications sector, and within the sample surveyed, place a high value on daycare services at their workplace. Daycare services were found to be the most important attribute among other workplace attributes such as extended paid maternity leave, equal pay for work of equal value, and flexible working hours.

Furthermore, the paper finds that, among several different possible traits for a daycare service, the most important trait the respondents looked for was proximity to the workplace followed by excellent hygiene and safety and having the same opening hours as the workplace. These choices strongly reiterate the majority preference of respondents for having a daycare service at their workplace.

The research attempted to calculate the value placed by respondents upon the provision of daycare services at their workplace. The paper replicated the methodology used by Connelly et al. by utilizing the contingent valuation method through subjecting respondents to a referendum style question that asks respondents to state the value they place on a daycare service described in the survey. The daycare service description mimics the daycare service described in Article 72 of Jordan's labor law. Our paper finds that, on average, respondents valued the daycare service at the workplace at approximately JD 52.2 per employee per month equivalent to JD 627 per employee per year.

The value of the daycare service articulated above is correlated in theory to benefits for the employers in the form of foregone wage increases of the same amount. As such, for the two companies investigated in this paper, enjoy annual savings that amount to, on average, JD 737,000 per year which is found by multiplying the average value for daycare services per person per year by the average number of employees in the two companies investigated in this paper.<sup>15</sup> This value does not capture the improved productivity of workers as a result of reduced absenteeism as well as the savings from reduced turnover of employees that are likely to result from providing a daycare service at the workplace.

The value of a daycare service was most pronounced for respondents who either had children under the age of 4 (and as such would need a daycare service) or respondents who held a master's degree. Moreover, contrary to expectations and common beliefs,

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<sup>15</sup> Since the value of the daycare service can be equated with foregone salary savings for the employer, the total savings enjoyed by the employer would equal the average value (or savings) per employee multiplied by the number of employees. The companies in our case study had an average number of employees of 1,175 (average of 1,250 employees for Zain and 1,100 employees for Orange).

male respondents valued the daycare service at their workplace at JD 49.8 per employee per month. Even young single men and women with no children valued the service at approximately JD 49 per employee per month signifying that the provision of a daycare service at the workplace has a significant value for all employees in a company.

## 8.2 Daycare Legal Provisions: Global Best Practices

A prominent study by the International Labor Organization showcases how daycare service provisions are stipulated in a number of countries around the globe. For example, like in Jordan, Brazil, Chile, and India stipulated that employers who employ a certain number of women must provide childcare services. However, upon implementation of such policy, concerns arose, similar to those in Jordan, that very few women are employed in such establishments. Moreover, such legislation raises concerns about the willingness of employers to officially hire women (ILO, 2010).

As such, public policies forcing employers to provide childcare support may have negative effects on employees and workers alike (ILO, 2010). Moreover, governments need not to place the full burden of providing childcare services solely on the shoulders of the employer. Given that daycare services can be thought of as a public good, the wide provision of such services cannot exist without a successful partnership between the public and private sectors with both parties sharing the burden and reaping the benefits.

Alternative methods to provide incentives for the wide provision of childcare services exist and have shown to be more successful than the cases of Jordan, Brazil, and Chile (ILO, 2010):

- In the Netherlands, employers contribute approximately 17% of the cost while the government subsidizes the remainder provided that the beneficiaries of the daycare service are low-income households.
- In France, the government subsidizes the cost of running the daycare services for up to 55% of the total cost for up to 5 years. Moreover, France subject daycare benefits as tax exempt benefits to employees and subject daycare costs as tax deductible expenses for employers. Finally, France grants a tax credit equivalent to 25% of all expenses made that facilitate a work-life balance provided that both parents are either working on enrolled in the education system.
- In the United Kingdom, the government exempts employers from tax and social security contributions of their employees provided that the employer either provides the use of a nursery, makes payments to a registered childcare provider, or provides his/her employees with vouchers to assist employees with childcare costs.
- In the United States, employees are granted a tax rebate of up to USD 5,000 for expenses related to childcare services. Furthermore, employers receive a tax credit up to 25% of all expenses incurred to provide a daycare service.

### 8.3 Article 72 in Jordan's Labor Law: Areas for Improvement

Article 72 of Jordan's labor law stipulates that:

*“The Employer who employs a minimum of twenty female Employees should provide a suitable place under the custody of a qualified caregiver to care for the Employees' children of less than four years of age provided that the number of children is not less than ten.”*

As shown in Section 8.2, Article 72 of Jordan's labor law places the financial burden of providing daycare services completely upon employers. This stipulation gave rise to concerns about the benefits from such an approach given that some employers were observed to be reluctant to hire married women in Jordan and in other countries such as Brazil or Chile (ILO, 2010). Furthermore, companies subject to this stipulation do not account for more than 1.8% of all companies in Jordan based on data from the Jordan Institutional Census by the Jordan Department of Statistics in 2011. As such, the applicability of this provision and its ability to achieve its goal of increasing women's participation in the labor force is in doubt.

The results of our analysis in Section 7 showcase that the daycare service at the workplace is valued by all employees regardless of gender (albeit the value differs by approximately 8% by gender). This result would imply that the provision in Article 72 of only subjecting the children of female employees to the condition is restrictive and prohibits men from being entitled to daycare services at the workplace. Furthermore, such a gender stipulation advances the norm that the female is solely responsible for childcare which is an outdated idea in the 21<sup>st</sup> century.

Given that companies enjoy benefits from having a daycare at the workplace in the vicinity of JD 52 per employee per person as a result of foregone salary increases, it becomes an imperative to study the cost-benefit decision making process for a company considering whether to establish a daycare service at the workplace. In order to provide incentives for companies to establish daycare services, public policy must be formed such that the scale is tilted towards benefits outweighing the costs.

Public policy can be enacted in order to reduce the costs of establishing and running a daycare service by the employer. This shift in policy is needed given that childcare services are a public good and, as such, the government must share the financial cost for the provision of such services in order to achieve the goal of a higher participation rate for women in the workforce.

The current cost sharing mechanism between the government and the employer is legally ambiguous under current law as the Income Tax Law No. 34 of 2014 does not clearly state whether the cost of daycare services is considered to be tax deductible expense or not. The government may subsidize the cost of establishing and running the daycare service through any or all of the following options:

- Clearly stipulate in the Income Tax Law that costs pertaining to daycare services are tax deductible. Furthermore, the law can stipulate that such costs are subject to a double deduction which would provide a strong financial incentive for employers to establish a daycare services as such a service would provide a tax shield (tax savings) equivalent to double its income tax rate.
- The government may offer tax credit equivalent to 25%-50% of the expenses incurred for the provision of daycare services by a company. This tax credit will directly reduce the income tax expense incurred by the company and thus improve its bottom line and hence its profitability metrics.
- The government may allow daycare expenses to be considered as an extra exemption for households to reduce their income tax liability. This benefit can be extended further to any expenses incurred by the household that promote a work-life balance.
- The government may provide direct financial assistance or cash transfers to employers who elect to provide a daycare service at their workplace subject to a specified ceiling.

The aforementioned responses would each incur significant financial costs for the government. As such, under current fiscal austerity measures that are capping current expenditure, it may seem difficult to enact policy increasing the expenses of the government (whether directly through increased expenditures or indirectly through foregone revenues). However, according to the study by Jordan Strategy Forum in 2015, each additional female employed in Jordan's economy contributes an estimated JD 13,000 in GDP per year. As such, policy can be designed such that the cost of government assistance per beneficiary does not exceed that value. In that case, society as a whole incurs a net benefit.

## 9. Improvements and Further Research

### 9.1 Improvements to the Research

The study was subject to a number of limitations that can be addressed in future iterations of this study or extensions to it; namely:

1. Exploring a richer set of characteristic variables that can explain the drivers and draggers for the value of a daycare service for an employee such as income level.
2. A larger sample size spanning multiple sectors would help solidify the results and make them robust as to extend the conclusions of the paper to Jordan's economy as a whole.
3. The survey can be conducted, in accordance with NOAA guidelines, through personal interviews rather than disseminated online in order to control for external factors and capture in-depth information.

### 9.2 Areas of Further Research

This research can be extended upon through two ways:

1. Developing a study that aims to formulate a public policy aimed to increase women's participation in the labor force by providing government financial assistance by type and limit whether for employers or households in light of the information calculated in Section 7 of this report.
2. Developing a study that looks at the feasibility of addressing the burden of childcare through the provision of different types of childcare services such as:
  - a. School-age care: childcare services for children enrolled in schools.
  - b. Back-up care: childcare services for employees who may be experiences family or work related emergencies and may need urgent childcare services.
  - c. Sick-child care: childcare services for sick children that may occur unexpectedly.
  - d. Non-standard-hours care: childcare services for employees whose work hours may be irregular or lie beyond the scope of a typical working day.
  - e. Paid parental family leave: augmenting the paid maternity leave in Jordan's current regulations with paid parental leave.

## 10. References

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## A. Annexations

### A.1 Survey Text

#### Page 1: Introduction

Hello and thank you for taking the time to complete this survey!

My name is Yacoub Shomali and I am a member of the Sadaqa campaign that advocates for a friendly work environment for women.

We are asking employees from different companies to complete this survey in order to understand how employees feel about daycares in their workplace and whether they benefit from having them available to them and their children.

All responses in this survey are confidential. We will not at any point ask you for information that may identify you. Furthermore, all responses will be reported in aggregate and no individual will be identified.

The estimated time to complete survey is 10 minutes.

We thank you for taking the time to answer our questions. Your responses are important and beneficial to us and the quality of our work.

#### Page 2: Qualitative Questions

In this page, we will ask you a number of qualitative questions about your preferences for your working environment.

Q1: Please rank each of the following characteristics when considering employment at a company on a scale of:

Very Important, Somewhat Important, Indifferent,

- The company has a daycare facility in the workplace
- The company has a zero-tolerance policy towards pay discrimination between men and women
- The company secures transportation for employees to and from their place of residence
- The company offers extended paid maternity leave (beyond 70 days)
- The company allows employees to work from home
- The company has flexible working hours and/or part time jobs
- Other (Write-in)

Q2: From the following choices, which company are you most willing to work for?

- Working for a company that has a daycare facility in the workplace
- Working for a company that does not have a daycare facility but offers a stipend that covers the financial cost of daycare services chosen by the worker.
- Neither

*If “Neither” is selected, the user will be prompted to input a text answer.*

Q3: Please select the appropriate choice below that reflects your agreement with the following statement:

*“I believe each company should have a daycare in their premises as one of the benefits to their employees”*

- Scale from 1 to 5 (Disagree completely to Agree completely)

Q4: Please choose the **five most important** characteristics you would look for in a daycare facility:

- Proximity to the workplace
- Proximity to home
- Certified as a professional daycare service from the government
- Home based daycare service
- Offering special services for children with special needs
- Offers a playground space
- Offers childcare services for children under the age of 4 years’ old
- Has an onsite medical staff
- Offers excellent educational programs
- Center offering an open-door policy for parents
- Certified or licensed staff
- Excellent hygiene and safety
- Opening for the same working hours as your company
- Other: (Write in answer)

### Page 3: Hypothetical Scenario

The scenario described below is completely **hypothetical**. We kindly ask you to read the description below and answer the questions that follow.

*Alpha Beta Technology Company is a company that provides software solutions for companies in the Middle East. They are currently considering to establish a daycare in their office. The daycare considered has the following characteristics:*

- *All employees with children will have the option to use the daycare regardless of how many children the employee has or gender.*
- *Only children under 4 years old will be accepted to the daycare.*

- *The daycare will be open from 8 a.m. to 5 p.m.*
- *The daycare will be managed by highly qualified and certified daycare professionals.*

*The company is looking to fund some of the daycare costs through employee contributions. The company's management will ask all employees whether they are willing to pay a fixed amount per month to fund the daycare.*

*If the majority of employees chose not to pay any fixed amount, then the daycare service will not be offered.*

*If the majority of the employees chose to pay a fixed amount, then the daycare service will be offered and all employees will contribute that amount every month in the form of a payroll deduction.*

Imagine that you are an employee of Alpha Beta Technology Company. The company's management asks you to answer the following questions:

Q5: What amount are you willing to pay to help establish a daycare at the company's offices?

- No amount
- 1 to 25 Jordanian Dinar per month
- 26 to 50 Jordanian Dinar per month
- 51 to 100 Jordanian Dinar per month
- 101 to 150 Jordanian Dinar per month
- 151 to 200 Jordanian Dinar per month
- 201 Jordanian Dinar or more.

If a respondent chooses "No amount" he/she will be directed to a page that asks them the following question:

Q6: Why did you choose your previous response?

- I do not believe that having a daycare in the workplace is important
- I believe that the company should pay for the daycare not the employees
- I do not know
- Other (Text box input)

If a respondent chooses any other response than "No amount" he/she will be direct to a page that asks them the following question:

Q7: Which statement of the below choices best reflects your position towards daycares:

- I believe having a daycare in the workplace is important because **it is important and beneficial to me.**

- I believe having a daycare in the workplace is important **because it is important and beneficial to the company and all workers.**
- Choices A and B
- Other (Text box input)

#### Page 4: Awareness Questions

Q8: How would you describe your knowledge of Article 72 of the labor law stipulating provisions about daycares at the workplace?

- Not aware
- Somewhat aware
- Fully aware

Q9: Would you prefer your company to have a daycare facility in the workplace?

- Yes
- No

#### Page 5: Characteristic Questions

In this page, we will ask you some questions that aim to understand the characteristics of you, your family, and household.

Q10: Are you a:

- Female
- Male

Q11: How many children do you currently have?

- 0
- 1
- 2
- 3
- 4
- 5 or more

Q12: Do you have children under the age of 4 years old?

- Yes
- No

Q13: What is your marital status?

- Single, never married
- Married
- Widowed

- Divorced
- Separated
- No Answer

Q14: How old are you?

- 15 to 19 years' old
- 20 to 29 years' old
- 30 to 39 years' old
- 30 to 39 years' old
- 40 to 49 years' old
- 50 to 59 years' old
- Above 60 years' old

Q15: What is the highest degree or level of school you have completed?

- Some high school education
- High school certificate
- Trade/technical/vocational training
- Bachelor's degree
- Master's degree
- Doctorate degree

## A.2 Detailed Sample Characteristics

Table 13- Detailed Sample Characteristics

Variable	Number of Observations
<b>Gender</b>	
Female	56
Male	42
<b>Number of Children</b>	
No Children	24
1 Child	24
2 Children	28
3 Children	18
4 Children	4
<b>Do you have any children under 4 years' old?</b>	
No	42
Yes	56
<b>Marital Status</b>	
Divorced	1
Married	79
Separated	1
Single	17
<b>Age Group</b>	
20 to 29 years' old	25
30 to 39 years' old	58
40 to 49 years' old	13
50 to 59 years' old	2
<b>Education Level</b>	
Bachelor's degree	81
Doctorate degree	1
Master's degree	14
Technical Diploma	2

## A.3 Tabulated Willingness to Pay Tables

### Notes:

- N denotes the number of responses.
- Willingness to pay is quoted as JD per employee per month.
- Relative to average WTP compares the WTP value to the survey average of JD 52.2 per employee per month.

### One-Dimensional Tabulation:

Table 14 - Willingness to Pay by Gender

Gender	Willingness to Pay	Relative to Average WTP	N
Female	54.0	3.4%	56
Male	49.8	-4.6%	42
<b>Total</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

Table 15 - Willingness to Pay by Number of Children

Number of Children	Willingness to Pay	Relative to Average WTP	N
0	47.9	-8.3%	24
1	66.6	27.5%	24
2	46.4	-11.2%	28
3	49.1	-6.1%	18
4	47.4	-9.3%	4
<b>Total</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

Table 16 - Willingness to Pay by Presence under the age of 4

Children Under 4	Willingness to Pay	Relative to Survey Average	N
No	46.0	-12.0%	42
Yes	56.9	9.0%	56
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 17 - Willingness to Pay by Marital Status**

<b>Marital Status</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
Divorced	38.0	-27.3%	1
Married	52.8	1.1%	79
Separated	75.5	44.5%	1
Single	49.0	-6.2%	17
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 18 - Willingness to Pay by Age**

<b>Age</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
20 to 29 years' old	43.0	-17.7%	25
30 to 39 years' old	60.2	15.2%	58
40 to 49 years' old	37.0	-29.3%	13
50 to 59 years' old	37.8	-27.7%	2
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 19 - Willingness to Pay by Education**

<b>Education</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
Bachelor's degree	45.2	-13.5%	81
Doctorate degree	13.0	-75.1%	1
Master's degree	99.6	90.7%	14
Technical Diploma	25.5	-51.2%	2
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

## Two-Dimensional Tabulation:

**Table 20 - Willingness to Pay by Gender and Age**

<b>Gender &amp; Age</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>Female</b>	<b>54.0</b>	<b>3.4%</b>	<b>56</b>
20 to 29 years' old	38.7	-26.0%	18
30 to 39 years' old	65.3	25.0%	32
40 to 49 years' old	32.9	-37.0%	5
50 to 59 years' old	75.5	44.5%	1
<b>Male</b>	<b>49.8</b>	<b>-4.6%</b>	<b>42</b>
20 to 29 years' old	54.1	3.5%	7
30 to 39 years' old	53.8	3.0%	26
40 to 49 years' old	39.5	-24.4%	8
50 to 59 years' old	0.0	-100.0%	1
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 21 - Willingness to Pay by Gender and Education**

<b>Gender &amp; Education</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>Female</b>	<b>54.0</b>	<b>3.4%</b>	<b>56</b>
Bachelor's degree	47.5	-9.1%	46
Master's degree	98.9	89.4%	8
Technical Diploma	25.5	-51.2%	2
<b>Male</b>	<b>49.8</b>	<b>-4.6%</b>	<b>42</b>
Bachelor's degree	42.2	-19.2%	35
Doctorate degree	13.0	-75.1%	1
Master's degree	100.5	92.4%	6
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 22 - Willingness to Pay by Gender and Number of Children**

<b>Gender &amp; Number of Children</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>Female</b>	<b>54.0</b>	<b>3.4%</b>	<b>56</b>
0	47.4	-9.3%	16
1	67.1	28.5%	18
2	48.8	-6.7%	15
3	46.9	-10.2%	7
<b>Male</b>	<b>49.8</b>	<b>-4.6%</b>	<b>42</b>
0	48.9	-6.3%	8
1	65.1	24.6%	6
2	43.7	-16.4%	13
3	50.4	-3.5%	11
4	47.4	-9.3%	4
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 23 - Willingness to Pay by Gender and the Presence of Children under 4 years' old**

<b>Gender &amp; Children Under 4</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>Female</b>	<b>54.0</b>	<b>3.4%</b>	<b>56</b>
No	44.5	-14.9%	25
Yes	61.8	18.2%	31
<b>Male</b>	<b>49.8</b>	<b>-4.6%</b>	<b>42</b>
No	48.2	-7.7%	17
Yes	51.0	-2.5%	25
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 24 - Willingness to Pay by Number of Children and Age**

<b>Number of Children &amp; Age</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>0</b>	<b>47.9</b>	<b>-8.3%</b>	<b>24</b>
20 to 29 years' old	35.9	-31.3%	12
30 to 39 years' old	59.9	14.6%	12
<b>1</b>	<b>66.6</b>	<b>27.5%</b>	<b>24</b>
20 to 29 years' old	48.0	-8.2%	10
30 to 39 years' old	85.9	64.4%	12
40 to 49 years' old	44.3	-15.3%	2
<b>2</b>	<b>46.4</b>	<b>-11.2%</b>	<b>28</b>
20 to 29 years' old	54.7	4.6%	3
30 to 39 years' old	49.8	-4.7%	21
40 to 49 years' old	22.3	-57.4%	4
<b>3</b>	<b>49.1</b>	<b>-6.1%</b>	<b>18</b>
30 to 39 years' old	53.4	2.2%	13
40 to 49 years' old	37.8	-27.6%	3
50 to 59 years' old	37.8	-27.7%	2
<b>4</b>	<b>47.4</b>	<b>-9.3%</b>	<b>4</b>
40 to 49 years' old	47.4	-9.3%	4
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

**Table 25 - Willingness to Pay by Gender and Marital Status**

<b>Gender &amp; Marital Status</b>	<b>Willingness to Pay</b>	<b>Relative to Survey Average</b>	<b>N</b>
<b>Female</b>	<b>54.0</b>	<b>3.4%</b>	<b>56</b>
Divorced	38.0	-27.3%	1
Married	55.2	5.7%	42
Separated	75.5	44.5%	1
Single	49.5	-5.3%	12
<b>Male</b>	<b>49.8</b>	<b>-4.6%</b>	<b>42</b>
Married	50.1	-4.1%	37
Single	48.0	-8.1%	5
<b>Average</b>	<b>52.2</b>	<b>0.0%</b>	<b>98</b>

## A.4 Understanding Coefficients of a Multinomial Logistic Regression

The coefficients in each regression column represent the log-odds or the relative likelihood for the characteristic captured by the independent variable impacting a given respondent's willingness to pay away from the reference level of JD 51 to JD 100 per employee per month to a different categorical level (a different amount for willingness to pay).

To better understand these coefficients, we resort to converting these coefficients to their respective probabilities utilizing the log-odds equation:

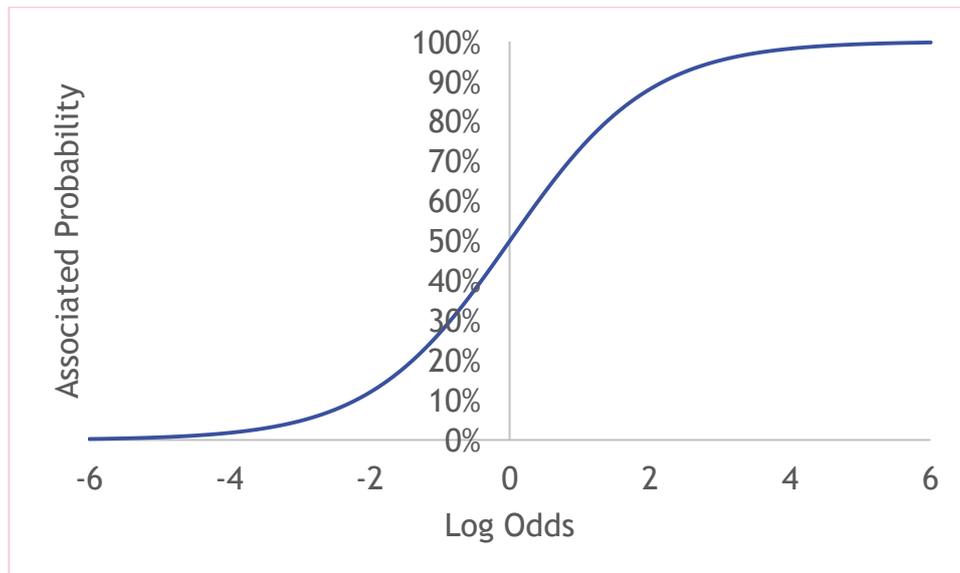
$$\beta_i = \log\left(\frac{p}{1-p}\right)$$

Where  $\beta_j$  represents the coefficient on the independent variable  $Z_j$ . The value  $p$  here represents the probability of a respondent moving to a given level relative to the reference level provided the respondent satisfies the value for independent variable. Solving for  $p$  yields:

$$p = \frac{e^{\beta_j}}{1 + e^{\beta_j}}$$

We note that  $e$  is the mathematical constant equal to approximately 2.718. The relationship between log-odds and their associated probabilities is shown in the figure below:

**Figure 9 - Relationship between Log-Odds and Associated Probabilities**



The figure above provides a few rules of the thumb to understand these coefficients:

1. If the coefficient is 0, the associated probability is 50% (or 50-50).
2. If the coefficient is negative, the associated probability is between 0 and 50%.
3. If the coefficient is positive, the associated probability is between 50% and 100%.