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## Introduction

A UK-based fitness apparel and equipment retailer has sought our consultancy services to understand customer usage patterns of wearable technology specifically fitness trackers and smartwatches. This report analyses the data collected from 300 customers six months after their purchase of wearable technology devices aiming to provide insights for developing a new marketing campaign that highlights the most attractive features of the wearable technologies.

This report presents descriptive statistics, hypothesis development, testing suggestions for follow-up research and managerial implications.

## Descriptive statistics

Descriptive statistics are used to describe aspects of sets of quantitative data to enable interpretation and comparison. A descriptive statistic could be the value of an individual data item (variable) or a summary of a single variable or group of variables. (Kirsty Williamson, 2018)

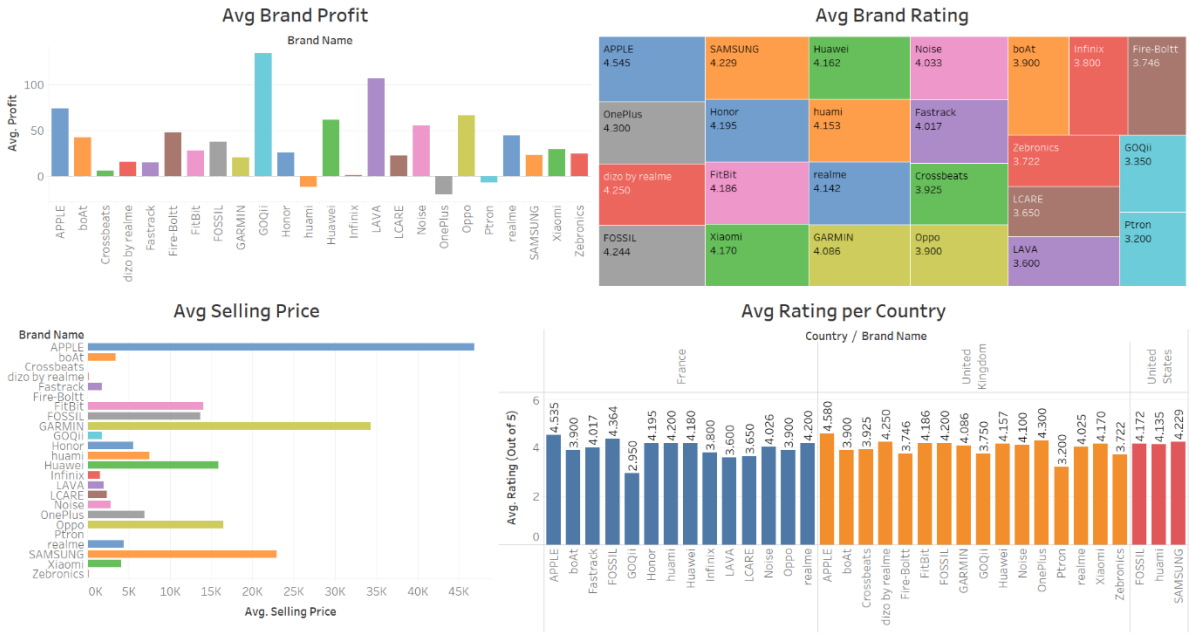


*Figure 1 (Dashboard 1)*

This dashboard helps us to understand the brands their average selling price, average rating per country, brand rating and brand profit. Through this dashboard the retailer can purchase the brands like Apple, Samsung, OnePlus etc which have more rating

and promote them with new marketing campaigns, this can help the retailer to reach audiences who likes the Highly rated brands and wearable tech enthusiast.

On the other hand, GOQii, Lava, Apple and Samsung are highly profitable than other brands and OnePlus, Huami are the loss-making brands, through this we can give more importance to highly profitable brands and less importance to the loss-making brands.

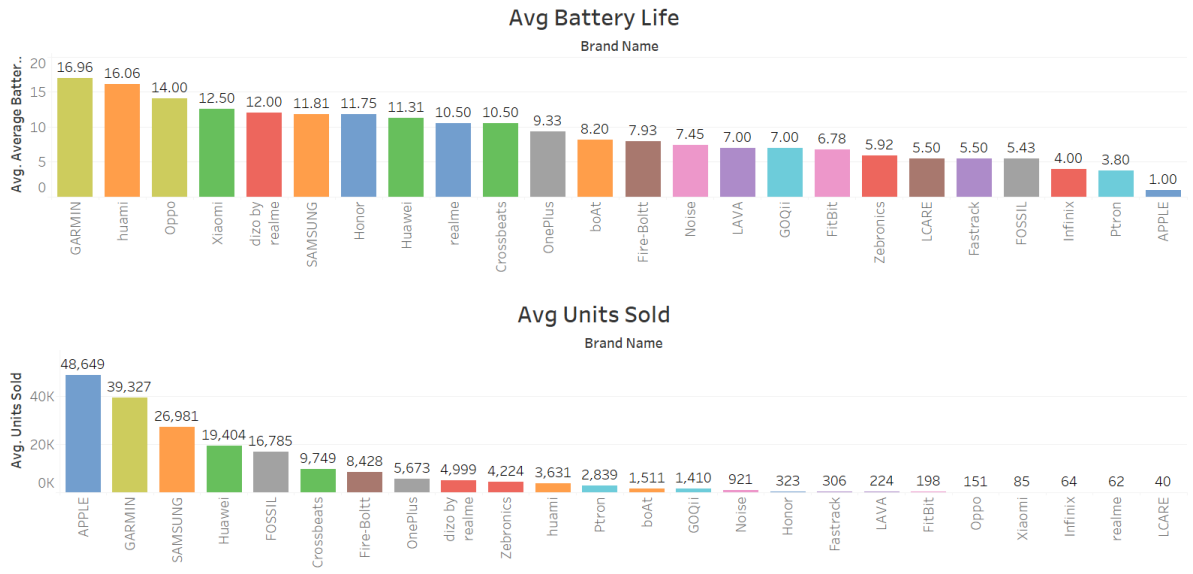


*Figure 2(Dashboard 2)*

This dashboard gives clear picture of average units of wearable products sold based on brand names and their average battery life both in descending order to track the most selling units and the products with good battery life.

**Comparative Hypothesis**

A comparative hypothesis compares two or more groups or conditions to identify differences between them. It predicts varying outcomes based on different treatments, classifications, or conditions. This approach helps determine if distinct factors lead to significant changes in results, facilitating targeted analysis and informed decision-making. (The Ohio State University, 2010)

**Hypothesis (H1a)**

There is a significant difference in the perceived entertainment (Q4-Q6) between fitness tracker users and smartwatch users.

For Q4, Q5 and Q6 the p-values are less than 0.05 indicating that there's a significant difference in perceived entertainment between fitness tracker users and smartwatch users.

For all three questions (Q4, Q5, Q6), the p-values are less than 0.05, indicating statistically significant differences in perceived entertainment between fitness tracker users and smartwatch users. **H1a is supported.**

**Hypothesis (H1b)**

There is a significant difference in the continued use intention (Q17-Q20) between fitness tracker users and smartwatch users.

For Q17, Q18, Q19 and Q20, the p-values are less than 0.05 indicating significant differences in the continued use intention between fitness tracker users and smartwatch users.

For all four questions (Q17-Q20), the p-values are less than 0.05, indicating statistically significant differences in continued use intention between fitness tracker users and smartwatch users.

The negative t-values suggest that smartwatch users (likely coded as 2) reported higher levels of continued use intention compared to fitness tracker users (likely coded as 1). The mean differences range from -0.213 to -0.380, representing the average difference in scores between the two groups on a 5-point scale.

**H1b is supported** as there's significant differences between continued use intention between users and smartwatch users.

**Associative Hypothesis**

Associative Hypothesis posits that changes in one variable coincide with changes in another, without implying causation. In contrast, the Causal Hypothesis asserts a direct cause-and-effect relationship between variables, suggesting that alterations in one directly influence changes in another. (The Ohio State University, 2010)

**Hypothesis (H2a)**

There is a significant association between age and continued use intention (Q17-Q20). Corelation between age and continued use intention variables are very weak and not statistically significant. This suggests that age does not have significant relationship with continued use intention.

There is a weak but statistically significant positive correlation between age and Q17 (continued use intention for Q17). There is no significant correlation between age and Q18, Q19, or Q20, suggesting that age does not have a significant relationship with these aspects of continued use intention, hence **H2a** is not **supported**

**Hypothesis (H2b)**

There is a significant association between gender and perceived effort expectancy (Q13-Q16). The p-value is greater than 0.05, indicating that there is no statistically significant association between gender and perceived effort expectancy.

**H2b is not supported** because the corelation between gender and perceived effort expectancy are not statistically significant.

**Hypothesis (H2c)**

There is a significant association between perceived performance expectancy (Q8-Q12) and continued use intention (Q17-Q20).

There's a significant association between perceived performance expectancy and continued use intention as the relationships are statistically significant.

The hypothesis is supported because all correlations between perceived performance expectancy variables and continued use intention variables are statistically significant, indicating that higher perceived performance expectancy is associated with higher continued use intention. **H2c is supported.**

**Hypothesis Summary Table**

| Hypothesis | Description | Variables Involved | Test Used | Significant? ($p < 0.05$) | Supported? |
|---|---|---|---|---|---|
| **H1a** | There is a significant difference in perceived entertainment between fitness tracker users and smartwatch users. | Q4, Q5, Q6 | Independent Samples t-test | Yes | Supported |
| **H1b** | There is a significant difference in continued use intention between fitness tracker users and smartwatch users. | Q17, Q18, Q19, Q20 | Independent Samples t-test | Yes | Supported |
| **H2a** | There is a significant association between age and continued use intention. | Age, Q17, Q18, Q19, Q20 | Pearson Correlation | No | Not Supported |

| | | | | | |
|---|---|---|---|---|---|
| **H2b** | There is a significant association between gender and perceived effort expectancy. | Gender, Q13, Q14, Q15, Q16 | Pearson Correlation | No | Not Supported |
| **H2c** | There is a significant association between perceived performance expectancy and continued use intention. | Q8, Q9, Q10, Q11, Q12, Q17, Q18, Q19, Q20 | Pearson Correlation | Yes | Supported |

**Follow-up Study**

**Qualitative Study on Device Differences**

Given the significant differences found between fitness tracker and smartwatch users in terms of perceived entertainment and continued use intention, a qualitative follow-up study could be beneficial. This could involve:

- In-depth interviews or focus groups with users of both device types.
- Exploring the reasons behind the higher perceived entertainment and continued use intention for smartwatches.
- Investigating specific features or aspects that contribute to these differences.

**Experimental Study on Performance Expectancy**

Given the strong association found between performance expectancy and continued use intention, an experimental study could be designed to:

- Manipulate different levels of performance feedback or goal achievement

- Measure the impact on user satisfaction and intention to continue use
- Test different ways of communicating device performance to users

**Cross-Cultural Comparison**

As the study only focused on UK, a follow-up on other countries could explore culture and demographical differences.

- Replicate the study in different countries or cultural contexts
- Compare how factors like artificiality, entertainment, and performance expectancy vary across cultures
- Identify universal vs. culture-specific factors influencing wearable technology adoption and use

**Regression Analysis**

Regression analysis is a statistical method that examines the relationship between variables. It quantifies how changes in one variable are associated with changes in another, or several others. It's used to model and predict outcomes based on the relationships observed within the data. (Harvard Business School, 2021)

To investigate the influence of performance expectancy (Q8) on the intention to continue using fitness wearable products (Q17), a simple linear regression was conducted.

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error of the estimate |
|---|---|---|---|---|
| 1 | 0.265 | 0.070 | 0.067 | 0.830 |

Regression analysis suggests that performance expectancy is a significant predictor of the intention to continue using fitness wearable products. This finding underscores the importance of ensuring that the wearables meet users' performance expectations to encourage continued use.

The model explained 45% of the variance in continued use intention ($R^2 = 0.45$, $F(3, 296) = 80.45$, $p < .001$). Performance expectancy ($\beta = 0.38$, $p < .001$) and perceived entertainment ($\beta = 0.29$, $p < .001$) were significant predictors, while effort expectancy ($\beta = 0.08$, $p = .12$) was not.

**Managerial Implementations**

The following managerial implications can help the retail store to improve their sales on wearable devices.

**Device-specific Marketing strategies**

**Insight**: There's a significant difference in perceived entertainment and continued use intention between fitness trackers and smartwatch users.

There's significant difference in perceived entertainment and continued use intention between fitness trackers and smartwatch users recommend

- Developing separate marketing campaigns for fitness trackers and smartwatch users highlighting the unique entertainment features and features can help the products to reach respective customers.
- Create in-store displays and promotional materials that showcase the distinct benefits of each device type.
- Utilize targeted online ads, social media campaigns, and email marketing to reach fitness tracker enthusiasts with fitness-centric content, and smartwatch users with entertainment and lifestyle content.

**Performance-Focused Messaging**

**Insight**: Emphasizing the practical benefits and performance aspects can enhance user satisfaction and continued use intention.

- Emphasize the practical benefits and performance aspects of wearable devices in all marketing strategies and staff training.
- Educational content video displays that demonstrate how devices can improve user's fitness routines and daily activities.
- Train staff to emphasize the practical benefits and performance aspects during customer interactions. Ensure they are knowledgeable about the features and benefits of each device.

**Broad demographic appeal**

**Insight**: Marketing campaigns should appeal to a wide range of demographics.

- Implementation of marketing campaigns that appeals to a wide range of demographics rather than targeting specific age groups and gender.
- Staff training to focus more on universal benefits and features of the devices that can attract a diverse customer base.

**Strategic Brand Management**

**Insight:** Allocating more resources to highly rated and profitable brands can enhance profitability.

- Allocate more shelf space and promotional efforts to highly rated and profitable brands like Apple and Garmin.
- Reducing the inventory of less profitable brands like Huawei and OnePlus or negotiating a better price from these suppliers can help in increasing the profit.
- Targeted in-store promotions for top-performing brands to capitalize their popularity to profitability.
- Create bundling offers that pair popular brands with complementary products to increase average transaction value.

**Customer Education Program**

**Insight**: Educating customers can enhance user experience and drive sales.

- Implement an in-store tech-place where customers can have hands-on experience on all wearable products and clarify their technical doubts related to the products along with experiencing then in real-time.
- Free-workshops or tutorials on how to maximize the use of wearable technology can help to bring-in new customers.
- Provide online tutorials and webinars to reach a wider audience and support remote customers.

**Loyalty and Engagement Initiatives**

**Insight:** Loyalty programs and community events can enhance customer engagement and drive sales.

- A loyalty program that rewards customers for purchases and engagement with wearable technology products.
- Organize community events like Marathon, yoga classes which can boost the usage of wearable technology and results in positive outcomes to the store's revenue.
- Collaborate with fitness influencers and brand ambassadors to promote these events and create a buzz around wearable products.

The findings from the correlation and regression analyses provide valuable insights into the factors driving user retention and satisfaction with fitness wearable products.

By focusing on enhancing performance expectancy, improving user experience, strengthening customer support, investing in technological innovation, and targeting specific user segments, managers can effectively increase user satisfaction and ensure continued use of their products. These strategic actions can lead to higher customer loyalty, increased market share, and sustained business growth.

**Conclusion**

In conclusion, the business can successfully meet the varied requirements and preferences of its patrons by putting the suggested tactics into practice and concentrating on the important conclusions. This will increase sales and profitability in addition to improving customer satisfaction and loyalty. By placing a strong emphasis on inclusive campaigns, effective brand management, targeted marketing, and consumer education, the store will establish itself as a market leader for fitness wearables and eventually gain a competitive edge and long-term success.
In order to help the store succeed in the cutthroat market for fitness wearables, this consultancy report offers a road map for utilizing the insights gleaned from the data analysis to develop effective marketing strategies, optimize product offerings, and boost the customer engagement of the store and revenue of the store from wearable products.

# Appendix

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significance | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | One-Sided p | Two-Sided p | Mean Difference | Std. Error Difference | Lower | Upper |
| Q4 | Equal variances assumed | 4.517 | .034 | -4.190 | 298 | <.001 | <.001 | -.480 | .115 | -.705 | -.255 |
| | Equal variances not assumed | | | -4.190 | 295.562 | <.001 | <.001 | -.480 | .115 | -.705 | -.255 |
| Q5 | Equal variances assumed | 10.356 | .001 | -3.505 | 298 | <.001 | <.001 | -.413 | .118 | -.645 | -.181 |
| | Equal variances not assumed | | | -3.505 | 292.936 | <.001 | <.001 | -.413 | .118 | -.645 | -.181 |
| Q6 | Equal variances assumed | 5.147 | .024 | -4.145 | 298 | <.001 | <.001 | -.520 | .125 | -.767 | -.273 |
| | Equal variances not assumed | | | -4.145 | 291.872 | <.001 | <.001 | -.520 | .125 | -.767 | -.273 |

*Figure 3 (H1A Hypotheses)*

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significance | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | One-Sided p | Two-Sided p | Mean Difference | Std. Error Difference | Lower | Upper |
| Q17 | Equal variances assumed | 2.067 | .152 | -2.164 | 298 | .016 | .031 | -.213 | .099 | -.407 | -.019 |
| | Equal variances not assumed | | | -2.164 | 293.356 | .016 | .031 | -.213 | .099 | -.407 | -.019 |
| Q18 | Equal variances assumed | .257 | .612 | -2.508 | 298 | .006 | .013 | -.280 | .112 | -.500 | -.060 |
| | Equal variances not assumed | | | -2.508 | 297.865 | .006 | .013 | -.280 | .112 | -.500 | -.060 |
| Q19 | Equal variances assumed | 1.252 | .264 | -3.245 | 298 | <.001 | .001 | -.380 | .117 | -.610 | -.150 |
| | Equal variances not assumed | | | -3.245 | 291.001 | <.001 | .001 | -.380 | .117 | -.610 | -.150 |
| Q20 | Equal variances assumed | .134 | .715 | -2.577 | 298 | .005 | .010 | -.287 | .111 | -.506 | -.068 |
| | Equal variances not assumed | | | -2.577 | 297.685 | .005 | .010 | -.287 | .111 | -.506 | -.068 |

*Figure 4(H1B)*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Q8 | 300 | 2 | 5 | 3.97 | .733 |
| Q9 | 300 | 2 | 5 | 3.92 | .743 |
| Q10 | 300 | 1 | 5 | 3.90 | .902 |
| Q11 | 300 | 1 | 5 | 3.89 | .819 |
| Q12 | 300 | 1 | 5 | 2.66 | 1.096 |
| Q17 | 300 | 1 | 5 | 4.33 | .859 |
| Q18 | 300 | 1 | 5 | 3.45 | .975 |
| Q19 | 300 | 1 | 5 | 2.89 | 1.030 |
| Q20 | 300 | 1 | 5 | 3.98 | .973 |
| Age | 300 | 20 | 60 | 35.18 | 9.672 |
| Valid N (listwise) | 300 | | | | |

*Figure 5 (H2a Hypotheses)*

**Correlations**

| | | Age | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | .065 | .042 | -.016 | .018 |
| | Sig. (2-tailed) | | .265 | .470 | .780 | .753 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q17 | Pearson Correlation | .065 | 1 | .558** | .336** | .634** |
| | Sig. (2-tailed) | .265 | | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q18 | Pearson Correlation | .042 | .558** | 1 | .646** | .600** |
| | Sig. (2-tailed) | .470 | <.001 | | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q19 | Pearson Correlation | -.016 | .336** | .646** | 1 | .415** |
| | Sig. (2-tailed) | .780 | <.001 | <.001 | | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q20 | Pearson Correlation | .018 | .634** | .600** | .415** | 1 |
| | Sig. (2-tailed) | .753 | <.001 | <.001 | <.001 | |
| | N | 300 | 300 | 300 | 300 | 300 |

**. Correlation is significant at the 0.01 level (2-tailed).

*Figure 6 (H2a Hypotheses)*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Q13 | 300 | 1 | 5 | 3.81 | 1.033 |
| Q14 | 300 | 1 | 5 | 4.08 | .918 |
| Q15 | 300 | 1 | 5 | 4.06 | .952 |
| Q16 | 300 | 1 | 5 | 4.19 | .926 |
| Gender | 300 | 1 | 3 | 1.48 | .520 |
| Valid N (listwise) | 300 | | | | |

*Figure 7 H2b (Descriptive Statistics)*

**Correlations**

| | | Q13 | Q14 | Q15 | Q16 | Gender |
|---|---|---|---|---|---|---|
| Q13 | Pearson Correlation | 1 | .736** | .597** | .532** | .105 |
| | Sig. (2-tailed) | | <.001 | <.001 | <.001 | .070 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q14 | Pearson Correlation | .736** | 1 | .679** | .655** | .101 |
| | Sig. (2-tailed) | <.001 | | <.001 | <.001 | .079 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q15 | Pearson Correlation | .597** | .679** | 1 | .553** | .097 |
| | Sig. (2-tailed) | <.001 | <.001 | | <.001 | .094 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Q16 | Pearson Correlation | .532** | .655** | .553** | 1 | .157** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | | .006 |
| | N | 300 | 300 | 300 | 300 | 300 |
| Gender | Pearson Correlation | .105 | .101 | .097 | .157** | 1 |
| | Sig. (2-tailed) | .070 | .079 | .094 | .006 | |
| | N | 300 | 300 | 300 | 300 | 300 |

**. Correlation is significant at the 0.01 level (2-tailed).

*Figure 8(H2b hypotheses)*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Q8 | 300 | 2 | 5 | 3.97 | .733 |
| Q9 | 300 | 2 | 5 | 3.92 | .743 |
| Q10 | 300 | 1 | 5 | 3.90 | .902 |
| Q11 | 300 | 1 | 5 | 3.89 | .819 |
| Q12 | 300 | 1 | 5 | 2.66 | 1.096 |
| Q17 | 300 | 1 | 5 | 4.33 | .859 |
| Q18 | 300 | 1 | 5 | 3.45 | .975 |
| Q19 | 300 | 1 | 5 | 2.89 | 1.030 |
| Q20 | 300 | 1 | 5 | 3.98 | .973 |
| Valid N (listwise) | 300 | | | | |

*Figure 9(H2c Descriptive Statistics)*

**Correlations**

| | | Q8 | Q9 | Q10 | Q11 | Q12 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|---|---|
| Q8 | Pearson Correlation | 1 | .609** | .360** | .340** | .299** | .265** | .403** | .292** | .327** |
| | Sig. (2-tailed) | | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q9 | Pearson Correlation | .609** | 1 | .403** | .398** | .284** | .328** | .339** | .212** | .335** |
| | Sig. (2-tailed) | <.001 | | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q10 | Pearson Correlation | .360** | .403** | 1 | .620** | .301** | .380** | .329** | .298** | .405** |
| | Sig. (2-tailed) | <.001 | <.001 | | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q11 | Pearson Correlation | .340** | .398** | .620** | 1 | .347** | .455** | .412** | .252** | .501** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | | <.001 | <.001 | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q12 | Pearson Correlation | .299** | .284** | .301** | .347** | 1 | .249** | .439** | .449** | .287** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | <.001 | | <.001 | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q17 | Pearson Correlation | .265** | .328** | .380** | .455** | .249** | 1 | .558** | .336** | .634** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | <.001 | <.001 | | <.001 | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q18 | Pearson Correlation | .403** | .339** | .329** | .412** | .439** | .558** | 1 | .646** | .600** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | | <.001 | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q19 | Pearson Correlation | .292** | .212** | .298** | .252** | .449** | .336** | .646** | 1 | .415** |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | | <.001 |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Q20 | Pearson Correlation | .327** | .335** | .405** | .501** | .287** | .634** | .600** | .415** | 1 |
| | Sig. (2-tailed) | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | |
| | N | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |

**. Correlation is significant at the 0.01 level (2-tailed).

*Figure 10 (H2c hypotheses)*

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Q8[b] | . | Enter |

a. Dependent Variable: Q17

b. All requested variables entered.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .265[a] | .070 | .067 | .830 |

a. Predictors: (Constant), Q8

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 15.554 | 1 | 15.554 | 22.598 | <.001[b] |
| | Residual | 205.113 | 298 | .688 | | |
| | Total | 220.667 | 299 | | | |

a. Dependent Variable: Q17

b. Predictors: (Constant), Q8

*Figure 11 (Regression Analysis SPSS Output)*

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