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Do Gender and Personality Traits Influence Frequency of Use of Deal Sites?

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Abstract

Although deal sites cannot be considered a new technology anymore, there is still only a limited amount of quantitative research on the topic. The paper aims to expand the body of knowledge. The study investigates impact of gender and personality traits on frequency of use of deal sites. Big Five Inventory-10 is used to measure personality traits. Three models are tested. First, all respondents are taken into account, i.e. also ones not aware of deal sites. In the first model, only gender is significant. Second, only respondents aware of deal sites are taken into account. In the second model, neuroticism, openness to experience, gender (and possibly agreeableness) are significant. Third, only respondents who use deal sites are taken into account. In the third model, openness to experience (and possibly extraversion) are significant.

Keywords: Deal Sites, Use, Personality Traits, Empirical Research

1 Introduction

By its nature, daily deal sites can be defined as social promotion sites or social media sites partners just like the well-known Groupon or LivingSocial, which usually offer vouchers or coupons for a local businesses at a deeply discounted price. As Gros and Grosova (2006) put it, price of goods or services is just one of the selection criteria, though still very important.

There are three main set of participants in a daily deal: subscriber, deal website, and merchant (Kim, Lee, & Park, 2013), where the revenue from it is divided between the daily deal site and the business (Schiller, 2011). As a consequence, it can be naturally stated that on the one hand, daily deals are involved in the action of representing the merchant, which offers discounted products, and on the other hand, they are appointed to present the customers, who are interested in purchasing them.

Interestingly, the daily deal's consumers are usually described as sporadic bargain hunters (Lacerda, Santos, Veloso, & Ziviani, 2015), but also can be defined as compulsive buyers. According to Kukar-Kinney, Scheinbaum and Schaefer (2016), the daily deal promotions can be closely associated with the compulsive buying, which explains the consumer's purchasing willingness as uncontrollable obsession. Moreover, Dholakia and Kimes (2011) reveal the statement that daily deal shoppers seem less sensitive to the so-called discount intensity, and they indicate more interest in the opportunity to experience some new products. Last but not least, Zhao, Wang and Gan (2016) argue that the deep discount can be considered as a main reason for a purchase, but only if the quality of the product is not considered as low.

Additionally, it seems that most of the academic studies related to different aspects over daily deals as a matter, use data obtained from the above mentioned two biggest players. Therefore, it can be assumed that to some extent most of the daily deal sites use also their models as a base for their own. For example, Ye, Sandholm, Wang, Aperjis, and Huberman (2012) make a comparison between Groupon and LivingSocial in relation to the dynamics of purchasing times. Byers, Mitzenmacher and Zervas (2012) utilize their data collection on a similar way, and analyze the relationship between deal sales and deal features.

In general, it was observed that there are almost no analyses concerned with the consumer's behavior in a daily deal, which probably can give more openings towards the knowledge about the rate at which daily deals occur. For example, there are studies, which focus is mainly on detailed examination of the businesses and the value of the use of deal sites as a reason that can bring profit or vice versa (Kumar & Rajan, 2011, Edelman, Jaffe, & Kominers, 2011).

Additionally, it was identified only one empirical research in relation to that issue, which classifies the daily deal site's consumers into two main groups: experienced customers and typical customers. According to Song, Park, Yoo and Jeon (2016), when the deal starts, the experienced consumers are more favorably disposed towards it, while the second group of shoppers tend to wait longer.

The aim of the paper is to investigate if gender and personality traits influence frequency of use of deal sites. Big Five Inventory framework is used because it is a prevalent framework for personality traits in information systems literature. Gender is considered because in many (probably in most) technology studies, men are higher and/or faster in adopting technology.

With regards to the rationale for impact of personality traits - deal sites are meant to promote business by encouraging preferably people, who never tried the product or the service, to try it due to a lower price while expecting that if they discover that they like the product or the service, they will keep buying it - people high in openness to experience are more interested in new things intrinsically, they do not need a monetary incentive, so it will be people low in openness to experience who would be likely influenced by deal site offers to try new products or services.

According to John, Naumann and Soto (2008) people high in extraversion enjoy being with others and according to Booth and Babchuk (1972), they report more leisure activities. So extraversion may be reflected by higher interested in deals for restaurants, sport activities (such as bowling) and services alike that allow them to spend time with other people. It is worth noting that the effect of extraversion is more narrow compared to openness to experience that applied equally to any type of service (including ones not allowing people to spend time with friends) and product.

The rest of the paper is organized in the following way: In the next section, there is a description what data were collected and how, and how they were analyzed. In the following section, results of the analysis are presented. The last section offers conclusions.

2 Data and methodology

Data were collected in the spring semester 2014 using an on-line questionnaire. Respondents were 284 university students from Denmark, of which 153 were male and 131 female. Most of them were from Aalborg and Aarhus universities in their first to fourth year of study. Due to homogeneity of respondents, control variables such as age, income or education level were not collected.

Frequency of use of deal sites was measured using the question - *How frequently do you use deal sites?* Possible answers were

- Never
- Once a year
- Every 6 months
- Every 3 months
- Once a month
- 2-4 times a month
- Many times per week

They were coded from 1 to 7. There was no additional indication provided in the questionnaire whether it means checking available deals, buying vouchers, or both.

This question was preceded by a question measuring awareness of deal sites - *Have you ever heard about websites for finding deals online? (e.g. sweetdeal.dk,groupon.com, livingsocial.com, dealnews.com, offers.com, coupons.com, or others?)* Overall, 237 respondents stated that they were aware of deal sites, 47 stated that they were not aware of them. The analysis of awareness versus non-awareness of deal sites is provided in (Sudzina, 2015a). Of

237 respondents aware of deal sites, 106 never used them and 131 did. The analysis of use versus non-use of deal sites is provided in (Sudzina, 2015b).

Personality traits were measured using the Big Five Inventory-10, i.e. a 10-item version of the questionnaire for the Big Five Inventory, developed by Rammstedt and John (2007). The instruction was to rate "How well do the following statements describe your personality" with statements "I see myself as someone who..."

- ... is reserved,
- ... is generally trusting,
- ... tends to be lazy,
- ... is relaxed, handles stress well,
- ... has few artistic interests,
- ... is outgoing, sociable,
- ... tends to find fault with others,
- ... does a thorough job,
- ... gets nervous easily,
- ... has an active imagination

on a 1-7 Likert scale where 1 meant strongly disagree and 7 stood for strongly agree. Extraversion was calculated as an average of the 1st (reversed-scored) and the 6th answer, agreeableness as an average of the 2nd and the 7th (reversed-scored) answer, conscientiousness as an average of the 3rd (reversed-scored) and the 8th answer, neuroticism as an average of the 4th (reversed-scored) and the 9th answer, and openness to experience as an average of the 5th (reversed-scored) and the 10th answer. The questionnaire contained additional questions which were not used in the analysis presented in this paper.

Ordinal logistic regression was used to analyze impact of gender and five personality traits (extraversion, agreeableness, conscientiousness, neuroticism, openness to experience) on frequency of use of deal sites. A multivariate approach was used. SPSS software was used for the analysis.

Three models are presented. In the first model, raw data are used, i.e. included are also non-users (153 respondents) who never used deal sites regardless whether they were aware of them or not. In the second model, included are non-users (106 respondents), who were aware of deal sites but never used them. In both models, frequency of use for non-users is coded as 1, i.e. never. In the third model, only respondents, who use deal sites, were taken into

consideration. Therefore, there is no estimate for [frequency = 1] in the third model. In other words, the models are meant for different scenarios depending on the amount of information, i.e. no other information than gender and personality traits for the first model, an additional information that the person is aware of deal sites for the second, and an additional information that the person uses deal sites for the third model.

3 Results

In the first model, all respondents, who never used deal sites (regardless whether they were aware of them), were considered as non-users. The research question is if gender, extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience influence use of deal sites. Ordinal logistic regression results for the full model are provided in Table 1. Cox&Snell R^2 is 0.056, Nagelkerke R^2 is 0.060, and McFadden R^2 is 0.020.

	Estimate	Std. Error	Wald	df	Sig.
[frequency = 1]	.385	1.161	.110	1	.740
[frequency = 2]	1.169	1.163	1.011	1	.315
[frequency = 3]	1.788	1.166	2.352	1	.125
[frequency = 4]	2.525	1.173	4.631	1	.031
[frequency = 5]	3.140	1.185	7.024	1	.008
[frequency = 6]	3.871	1.211	10.216	1	.001
extraversion	.039	.110	.125	1	.724
agreeableness	.179	.124	2.077	1	.150
conscientiousness	-.037	.113	.111	1	.739
neuroticism	.113	.099	1.289	1	.256
openness	-.145	.117	1.550	1	.213
[gender=male]	-.662	.244	7.359	1	.007

Table 1: Ordinal logistic regression with all respondents

Only gender is significant in the first model. Being male is associate with a negative estimator of frequency of use of deal sites. The reason for not even one personality trait being significant could be inclusion of respondents who were not aware of deal sites.

So, in the second model, only respondents, who were aware of deal sites but never used them, were considered as non-users. Respondents, who were not aware of deal sites, were excluded from the analysis. The same independent variables were used. Ordinal logistic regression results for the full model are provided in Table 2. Cox&Snell R^2 is 0.108, Nagelkerke R^2 is 0.113, and McFadden R^2 is 0.036.

	Estimate	Std. Error	Wald	df	Sig.
[frequency = 1]	.315	1.206	.068	1	.794
[frequency = 2]	1.248	1.209	1.066	1	.302
[frequency = 3]	1.931	1.213	2.534	1	.111
[frequency = 4]	2.713	1.221	4.934	1	.026
[frequency = 5]	3.351	1.233	7.384	1	.007
[frequency = 6]	4.098	1.259	10.591	1	.001
extraversion	.076	.115	.437	1	.508
agreeableness	.240	.132	3.297	1	.069
conscientiousness	-.032	.116	.078	1	.781
neuroticism	.220	.106	4.337	1	.037
openness	-.247	.124	3.978	1	.046
[gender=male]	-.782	.257	9.220	1	.002

Table 2: Ordinal logistic regression with respondents aware of deal sites

Neuroticism, openness to experience and gender are significant in the second model. In case of a larger sample, possibly agreeableness may prove to be significant as well. The influence on neuroticism (and agreeableness) on frequency of use of deal sites is positive, while the impact of openness to experience and gender is negative (the effect of being male was negative also in the first model).

Openness to experience is significant and in the direction hypothesized in the introduction. The hypothesized impact of extraversion was discovered.

The reason for neuroticism being significant is not completely clear. Neuroticism may imply more compulsive behavior that likely means usage. But most probably in only turns a non-user into a user, since neuroticism is not significant in the third model analyzing only users.

The reason for agreeableness being possibly significant is not clear. It may mean that a person agrees that the deal is worth trying or valuable as advertized.

In the third model, only respondents, who used deal sites, were considered. Respondents, who never used deal sites, were excluded from the analysis, therefore there is no estimate for [frequency = 1] in Table 3. The same independent variables as before were used. Ordinal logistic regression results for the full model are provided in Table 3. Cox&Snell R^2 is 0.078, Nagelkerke R^2 is 0.081, and McFadden R^2 is 0.026.

	Estimate Std.	Error	Wald	df	Sig.
[frequency = 2]	-.274	1.602	.029	1	.864
[frequency = 3]	.722	1.603	.203	1	.652
[frequency = 4]	1.657	1.608	1.062	1	.303
[frequency = 5]	2.349	1.617	2.109	1	.146
[frequency = 6]	3.125	1.637	3.646	1	.056
extraversion	.286	.157	3.331	1	.068
agreeableness	-.072	.164	.193	1	.661
conscientiousness	.123	.151	.661	1	.416
neuroticism	.099	.137	.522	1	.470
openness	-.344	.167	4.235	1	.040
[gender=male]	-.409	.335	1.491	1	.222

Table 3: Ordinal logistic regression with respondents who use deal sites

Openness to experience is significant in the third model. In case of a larger sample, significance of extraversion may decrease below .05. Compared to the second model, neuroticism does not appear to be significant. The influence of openness to experience on frequency of use of deal sites is negative, while the impact of extraversion is positive.

4 Conclusion

In spite of fact that deal sites exist over a decade now, they are used only by approximately by half of the surveyed respondents and there are still some people (approximately one sixth in this sample) who never heard of them. The aim of the paper was to investigate the influence of gender and Big Five Inventory personality traits (extraversion, agreeableness, conscientiousness, neuroticism, openness to experience) on frequency of use of deal sites.

Three models were used to estimate their influence on frequency of use of deal sites. When all respondents were taken into consideration, only gender was significant. When information on whether a respondent is aware of deal sites is available, and only such respondents were taken into consideration, neuroticism, openness to experience, gender (and possibly agreeableness) were significant. When information on whether a respondent uses deal sites is available, and only such respondents were taken into consideration, openness to experience (and possibly extraversion) were significant.

So, depending on the background information is available about respondents, it would be appropriate for future studies focused on frequency of use of deal sites to include abovementioned variables as control variables. From a different point of view, if Big Five Inventory is to be used in a future study focused on frequency of use of deal sites and there is

a need to cut down on questions, statements for conscientiousness can be dropped as it is unlikely to be significant considering its significance was between 0.416 and 0.781 in the presented analysis.

To conclude, women are more likely to use deal sites but considering only users, there is no significant difference between frequency of use between genders. It is people low in openness to experience who need the extrinsic motivation provided by deal sites in order to try new products and services. Further research using a probability sampling is necessary. Such research should then include additional control variables, such as age, education and income levels. It should also aim to test whether high extraversion leads to high interest only in deals which allow to spend time with others, such as restaurants, sporting and other leisure offers, or in all kinds of deals equally.

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