Local Bias in Equity Crowdfunding: Evidence from the German Market

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Abstract

We investigate whether local preferences exist among investors in the German equity crowdfunding market. Based on data from the German crowdfunding platform Companisto, we find that domestic investors favor ventures that are geographically closer to their place of residence. The effect turns out to be robust at the investment level as well as the individual investor level. Moreover, we provide evidence that domestic female investors exhibit stronger local biases than their male counterparts. In addition, our results suggest that local biases are stronger for investments in ventures with female managing directors. Thus, from a female entrepreneur's perspective, choosing the 'right' location for a venture's headquarter – that is, a location in close proximity to a large body of potential crowd investors – may be of particular importance to maximize funding success.

Keywords: equity crowdfunding, local bias, venture financing, geographical proximity, female entrepreneur, informational advantage, investment locality

JEL: D91, G11, G41, J16, O16

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1 Introduction

In this paper, we investigate whether the geographical distance between investors' place of residence and the location of a venture plays a role in explaining funding success in equity crowdfunding campaigns. The existence of such a "local bias" is a well-documented phenomenon among private investors (Feng and Seasholes 2005; Ivkovic and Weisbenner, 2005) and professional investors like mutual fund managers (Coval and Moskowitz, 2001; Pool, Stoffman, and Yonker, 2012), hedge fund managers (Sialm, Sun, and Zheng, 2020), or venture capitalists (Cumming and Dai, 2010). There is, however, no consensus as to its root causes. Some scholars view investors' tendency to overweigh local firms in their portfolios as rational given that geographic proximity may improve access to private information, lower cost of information acquisition, and allow for better monitoring (Coval and Moskowitz, 2001). Others emphasize psychological factors and claim that local biases may not be information-driven, but rooted in individuals' social networks (McPherson, Smith-Lovin, and Cook, 2001), in a general sense of familarity with the respective investment target (Huberman, 2001), or simply in higher in investor attention to local firms (Huang, Qiu, and Wu, 2016).

The emergence of equity crowdfunding provides new opportunities to study investor behavior in the context of this distinction between informational and psychological factors. On the one hand, the standardized, internet-based investment process facilitates the flow of information, and reduces the cost of information acquisition. Information on potential investments is provided in a timely and homogenous way, and available to all investors via the crowdfunding platform. As a consequence, local informational advantages might play a lesser role in equity crowdfunding than in the case of other types of investments. On the other hand, local informational advantages might still be relevant. In particular, the information provided on the platform might be impaired by "cheap talk" (Cumming, Hornuf, Karami, and Schweizer, 2019), or by potential incentives on behalf of the platform to selectively release value-relevant information to maximize fee income from successful financing rounds. Moreover, it is unclear to which extent equity crowdfunding investors differ from "traditional" private or professional investors with respect to the effect of psychological factors on their investment decisions. As some argue, equity crowdfunding investors tend to be more driven by a community logic based on trust and reciprocity (Vismara, 2019; Cumming, Meoli, and Vismara, 2019), and less active in monitoring the firms they invest in (Blaseg, Cumming, and Koetter, 2021).

In this context, we contribute to the literature on equity crowdfunding by examining the link between geographic proximity and funding activity. Our analysis is based on a dataset that comprises 58,404 investment decisions made by 19,328 individuals between June

2012 and May 2019 on the German platform Companisto. We conduct multiple regression analyses on the amount of capital pledged in individual investment decisions. Our results suggest that geographic proximity matters to domestic crowdfunding investors' decisions. Overall, we detect a significant local bias among domestic investors at the investment as well as the investor portfolio level. Moreover, we find a stronger local bias in individual investments, as well as in investor-specific crowdfunding portfolios, of domestic females. On the demand side, we show that ventures with a female managing director tend to be more influenced by local bias of investors. In this regard, our paper contributes to the literature on gender differences in entrepreneurial financing. Moreover, by looking at the relationship between the investor's gender and the gender of the investee's top manager, we find evidence of the presence of gender homphily.

Our findings have policy, managerial, and practical implications. They are of relevance to policy makers and online platforms aiming at increasing the efficiency of entrepreneurial financing processes, and hence at fostering a sustainable development of the equity crowdfunding market. Finally, our paper shows that choosing the 'right' location for a venture's headquarter – that is, a location close proximity to a large body of potential crowdinvestors – may be of particular importance for female entrepreneurs to maximize funding success.

The remainder of this paper is structured as follows. Section 2 provides an overview of existing studies on investors' local biases and develops our hypotheses. Section 3 explains the research design. Methodology, variables and data employed to test the hypotheses are discussed in this section. Section 4 contains summary statistics, our main results, and several robustness checks. Section 5 concludes the paper.

2 Literature Review and Hypothesis Development

2.1 Local Bias in Traditional Financial Markets

The bias in favor of geographically proximate investment opportunities is a well-documented phenomenon in financial markets. Among other pioneers, French and Poterba (1991) provide evidence to the lack of international diversification in investment portfolios. They find most investors choose to hold nearly all of the wealth in domestic assets. Japanese investors allocate 98.1% of their equity portfolios to domestic stocks, while U.S. investors hold 93.8% of their portfolio domestically. Similar pattern is observed in portfolios of British investors. 18.0% of them are held abroad. Studies of other scholars also reveal the presence of this "home bias" (Gehrig, 1993; Cooper and Kaplanis, 1994; Tesar and Werner, 1997; Strong and Xu, 2003; Teo, 2009; Mondria, Wu, and Zhang, 2010). Coval and Moskowitz (1999) extend the research into the domestic portfolio arena. Looking into domestic portfolios of U.S: mutual fund managers, they find that these managers prefer picking stocks of locally headquartered firms when constructing their

domestic portfolios. They document this pattern as "home bias at home". More recent studies such as Coval and Moskowitz (2001) and Pool, Stoffman, and Yonker (2012) also confirm the existence of this "local" bias in mutual fund manager investments. Sialm, Sun, and Zheng (2020) shed light on the hedge fund industry and discover funds of hedge funds tend to overweight hedge funds located in their local areas. Significant local bias is also detected in private equity markets (Florida and Smith, 1994; Powell et al., 2002; Zook, 2002; Chan et al., 2005). Especially, Cumming and Dai (2010) report, on average, ventures contained in venture capitalists' portfolios are located about 48.5% closer than those in the benchmark portfolio are. Sialm, Sun, and Zheng (2020) also confirm that funds of hedge funds tend to pick hedge funds located in their local areas to form their portfolios. Besides professional and institutional players in traditional financial markets, individual and household investors also have a strong preference for holding local stock (Benartzi, 2001; Huberman, 2001; Grinblatt and Keloharju, 2001; Feng and Seasholes, 2005; Massa and Simonov, 2006; Seasholes and Zhu, 2010; Huang, Qiu, and Wu, 2016). Ivkovic and Weisbenner (2005) find that U.S. retail investors exhibit an even stronger local bias than U.S. mutual fund managers do.

A variety of studies is conducted to address the question why people favor geographically proximate investment opportunities. Many researchers argue that this behavior pattern stems from rational considerations, for instance Coval and Moskowitz (2001), Ivkovik and Weisbenner (2005), Massa and Simonov (2006), and Ivkovik, Sialm, and Weisbenner (2008). As proposed by Coval and Moskowitz (2001), geographic proximity helps investors access to private information of local companies, lower cost of information acquiring and processing, and better exercise monitoring and controlling. Feng and Seasholes (2005) further put forth that investors can possess not only a larger amount of information but also more precise information about nearby companies. Coval and Moskowitz (2001) and Ivkovic and Weisbenner (2005) confirm that locally available information is value-relevant, while both professional and individual investors are capable of exploiting local informational advantage and hence achieve superior returns. The better investors exploit local knowledge, the higher abnormal returns they yield in their local investment. Other researchers have discredited asymmetric information between proximate and distant investors as the reason and pointed towards psychological factors. For instance, Seasholes and Zhu (2010) claim that local bias of individual investors might not be information-driven. They find holding local stocks does not help investors yield abnormal high returns, while local buys even underperform local sells. This implies that individual investors do not possess "value-related information about the local stocks they hold and trade"[1]. Homophily might explain part of this bias. According to McPherson, Smith-Lovin, and Cook (2001), homophily breeds individuals' social networks. Geographic propinquity, together with other "sociodemographic, behavioral, and intrapersonal characteristics" like

[1] See: Seasholes and Zhu (2010), p. 2005.

race, ethnicity, age, gender, education, religion, family, and organizations, contributes to the formation and the persistence of homophilous network ties[2]. Individual investors may have the same social and cultural background as executives of geographically proximate companies. They may also have close personal ties with these local executives. Familarity can be another explanation for local bias. According to Huberman (2001), "Familiarity is associated with a general sense of comfort with the known and discomfort with – even distaste for and fear of – the alien and distant"[3]. Huberman (2001) states that individual investors simply select stocks with which they are familiar. Grinblatt and Keloharju (2001) classify three attributes of familiarity, namely language, culture, and distance, and conclude that distance plays a role in investor preference. Strong and Xu (2003) survey fund managers for possible explanations of home bias. Similar to French and Poterba (1991), they find home bias cannot be explained by institutional factors. They further point out that fund managers show greater optimism towards their home country securities. Benartzi (2001) explores the preference of employees for holding stocks of employing firms. Observing disproportional allocation to company stocks not associated with subsequent returns, he suggests non information-based explanations - optimism and overconfidence. Huang, Qiu, and Wu (2016) detect locality of investor attention, which may also play a role in the formation of local bias of investments.

While a general agreement has not been reached as regards reasons for investment locality, scholars, in general, consider local bias a sub-optimal behavior in decision-making, since investors do not develop optimally diversified portfolios in the spirit of Markowitz (1952). They agree that this biased behavior of investors can lead to economic inefficiencies.

2.2 Local Bias in Crowdfunding

Investors involved in crowdfunding, especially in equity crowdfunding, might exhibit different patterns from their peers in traditional financial markets. The informational and psychological factors discussed in last section may influence their decision making to different degrees. The informational aspect of local bias may differ. On the one hand, the Internet facilitates the flow of information, reduces cost of information acquisition, and increases investors' capability to process information. Moreover, the standardized investment process in equity crowdfunding lowers transaction cost. Public information is provided with homogeneous structure and available on the online platform. Subsequently, local informational advantage might have been eliminated in equity crowdfunding. On the other hand, local informational advantage might persistently contribute in equity crowdfunding. This is first attributed to the quality of information available on the online platform. As argued by Cumming, Hornuf, Karami, and Schweizer (2019), information given on the platform might be cheap talk. Entrepreneurs try to raise some capital and say

[2] See: McPherson, Smith-Lovin, and Cook (2001), p. 415.
[3] See: Huberman (2001), p. 19.

beautiful words about their projects. Platforms involved in equity crowdfunding, acting as a two-sided platform, earn commission from successful financing rounds. They might selectively release information. As a result, information given on the platform may be of low quality. Second, local bias may even increase with investors' capacity to process information. According to Van Nieuwerburgh and Veldkamp (2009) and Günther, Johan, and Schweizer (2018), investors might select information to process and use additional information to build up their pre-existing local knowledge. Investors do not necessarily expand their horizons. Third, controlling and monitoring are difficult to exercise in equity crowdfunding. Contracts in equity crowdfunding are generally provided in a standardized form with no early warning and control mechanism. Investors normally have limited investment proficiency, pledge a small amount of money, and receive a small stake in the venture. Moreover, investors know the presence of a large number of peer investors and may want to free ride and not exercise costly monitoring activities (Blaseg, Cumming, and Koetter, 2021). In the context of equity crowdfunding, the emotional elements of local bias may remain unresolved. For instance, investors may still be familiarity-biased. They may want to have a physical visit of a venture in the same city, speak directly to customers, suppliers, and employees. Obtaining tangible information about the venture, they have and enjoy the feeling of familiarity. Therefore, crowd investor can still prefer geographically proximate ventures when making decisions.

Despite the growing importance of crowdfunding in corporate financing and demand for better understanding of the behavior of crowd investors, few studies have been conducted to address the question whether geographic propinquity still matters in crowdfunding, especially in equity crowdfunding. Agrawal et al. (2015) reveal the influence of distance on investment patterns in pre-purchase crowdfunding, while studies from Lin and Viswanathan (2016) and Jiang, Liu and Lu (2020) confirm that local bias commonly exists among investors in the peer-to-peer (P2P) lending market. Analyzing data from a pre-purchase crowdfunding platform sellband, Agrawal et al. (2015) reveal that investment patterns over time are related to geographic distance. Local investors engage much earlier. However, this pattern disappears when the researchers control for family and friend investors. This implies private information plays a role in local bias. Moreover, distant investors become more willing to pledge as the artist accumulates capital, whereas local funders do not. Local bias of investors is also demonstrated in lending-based crowdfunding, yet it seems to be attributed to psychological factors. Jiang, Liu, and Lu (2020) investigate 271,297 observations at the investors-province-month level from a major P2P lending platform in China Renrendai. They use preference for a particular province to measure lenders' local bias and examine its effect on investment decisions, controlling for investor demographics like gender, education and income, and loan characteristics including loan size, interest rate, maturity and credit rating. Their results confirm that local biases are commonly present among investors in the P2P lending market: investors have a 9.3% higher probability and put 105% more money in lending to local borrowers. They also

provide evidence that social heterogeneity, including geography, language, and social trust, explain the degree of local bias of investors. Observing the underperformance of location biased investors including higher default risk, lower recovery rate, and lower realized return, they propose that local bias of investors involved in P2P does not stem from local information advantage. Lin and Viswanathan (2016) also provide support to emotional explanations of local bias in debt-based crowdfunding. They examine detailed transaction data on the U.S. platform Prosper.com between January 2007 and May 2008. They then employ a quasi-experimental to control for effects of unobservable quality-related information enveloped in borrowers' location. They further analyze data from a natural experiment, mini prosper, a regulation-induced period in which lenders were restricted to only one state and therefore location cannot be used as a proxy for borrower quality. In all three approaches, they detect a strong local bias. They therefore conclude that local bias in debt-based market is not driven by private information through social networks (like friends and friends of a friend) or other typical economic factors including value-relevant information concealed in location. Instead, they put forward that local bias is more likely to be a psychological phenomenon. To our knowledge, there are two papers in the academic literature on local bias in equity crowdfunding. Günther, Johan, and Schweizer (2018) present first evidence for the influence of geographic propinquity on investment decisions in the equity crowdfunding context. Their analysis relies on data from the Australian Small Scale Offerings Board. They regress investment dummy on distance, investor type, venture and campaign characteristics. Overseas investors are found not location-biased, while home country investors tend to display a strong preference for proximate ventures. Moreover, locality does not differ significantly between domestic retail and accredited investors. We note that investments explored in the study are large and the number of investors for each venture is small[4]. Parcel size ranges from AU $5000 to AU $200,000, averaging at AU $31,605.79. There are 487 investors for 104 projects in the dataset, indicating that an average project attracts about five contributors. Moreover, 9% of investments are made by accredited investors. Based on these features of their dataset, we argue their observations differ significantly from investments in the German equity crowdfunding market, while it needs a further examination whether similar results can be obtained using data from the German market. Analyzing hand-collected data on 20,460 investments by 6,599 investors to 74 campaigns from two distinct German platforms for the period from November 2011 to August 2014, Hornuf, Schmitt, and Stenzhorn (2020) provide support to the presence of local bias in equity crowdfunding. Specifically, they show that locality exists not only at the individual investment level but also in value-weighted portfolios of individual investors. Similar to Günther, Johan, and Schweizer (2018) who distinguish investors based on their investment professionalism, they classify investors into subgroups with respect to the amount of capital and the number of ventures invested. The find that angel-like investors (with investment amount of €5,000 or more in

[4] Hornuf, Schmitt, and Stenzhorn (2020) are also aware of these features of the dataset in their paper.

a campaign) are more likely to pick up geographic proximate ventures, while well-diversified investors are less likely to be location biased. They observe the underperformance of local investments and therefore suggest emotional instead of economic elements as possible reasons for local bias. In spite of the large dataset and the comprehensive empirical analyses, their study has some limitations. First, it relies on a dataset, which might not be representative of investments in the German equity crowdfunding market. The dataset covers the period from 2011 to 2014. In this period, the German equity crowdfunding market was still at its early stage. After that, it has dramatically developed in terms of the number of investors and ventures as well as the amount of capital invested. Second, their study focus on influencing factors of investors' local bias. It does not investigate whether geographical distance plays a role in investment decisions (whether and how much to invest). Gender difference in distance sensitivity is not examined either. Third, their results about the insignificant difference in local bias of males and females might not hold anymore when adding recent data to the analyses. Investors who enter into the equity crowdfunding market at its early stage might have significantly different characteristics from those entering late. They may be more active in searching investment opportunities and more capable of exploiting information transmitted online. They may have higher investment literacy thus suffer less from emotional factors like homophily, over-optimism, and overconfidence. Particularly, these differences between precursors and latecomers might be exaggerated among females. Based on reasons stated above, we expect to observe local biases in the German equity crowdfunding and stronger local biases among female investors as a whole than their counterparts, when employing recent investment data from the German equity crowdfunding market.

2.3 Hypothesis Development

Summarizing existing studies on local bias, we find that it remains an open question whether the Internet and the nature of equity crowdfunding can render local bias much less relevant. Our study first investigates this question. Based on the results of existing studies, we expect investors in equity crowdfunding to prefer geographically proximate ventures when making individual investment decision while exhibiting local bias when constructing their portfolios. We test the following two hypothesis:

Hypothesis 1: Geographic distance between investors and ventures is negatively associated with investment decisions in equity crowdfunding.

Hypothesis 2: Local bias exists in equity crowdfunding.

Moreover, we identify a research gap in the literature, which is whether male and female investors exhibit local bias in equity crowdfunding in different degrees. In the academic literature on gender differences, it is widely acknowledged that males and females have different styles of information processing. As suggested by the selective model of

information process, males tend to use a selective, heuristic way to process information and base their judgements on a single cue, whereas females tend to use a comprehensive, holistic processing model and base judgements on all available cues. (Meyers-Levy 1989, Darley and Smith 1995, Graham et al. 2002). The information processing style might influence the investor's perception of risk and lead to different investment strategies. Applying it to the equity crowdfunding context, difference in information process might result in different degrees of locality reduction between males and females. Male investors may exploit information about the campaign transmitted online and given on the platform and build up their judgements about quality and prospect of ventures purely on this information set. In contrast, female investors may think online available information still insufficient thus may employ it as supplement to their pre-existing local knowledge and judgements. This implies while local information may not play a role in male investors' decision-making anymore and only emotional elements matter, female investors still rely on local information advantage when selecting ventures. As a result, it may be the case that both male and female investors are still distance sensitive in equity crowdfunding, yet the latter exhibit a stronger local bias. Our present study examines the diversity of geographic sensitivity between male and female investors at the individual investment level. It also addresses the issue whether female investors in the equity crowdfunding market exhibit stronger local bias when constructing portfolios. We investigate the following two hypotheses:

Hypothesis 3: Female investors are more sensitive to geographic distance.

Hypothesis 4: Female investors exhibit stronger local bias in ECF.

Besides, existing studies have not examined whether geographical proximity has diverse effect on investment decisions about ventures with female managing directors compared to those with male-only management team. It is unexplored in the literature either how distance sensitivity of investors will link up with gender-related homophily to influence investment decisions. Therefore, we test the following two hypotheses:

Hypothesis 5: Gender-related homophily exists in ECF. Female investors are more likely to support female entrepreneurs.

Hypothesis 6: Female-led ventures are more influenced by distance sensitivity of investors.

3 Research Design and Methodology

3.1 Research Design

Multiple regression analyses are performed to capture the influence of geographic proximity on investment decisions and its diversity among female and male investors (Hypotheses one and three). These analyses are also able to reveal whether gender-related

homophily exists in equity crowdfunding and whether ventures with female entrepreneurs would benefit more from geographic propinquity to investors in the presence of gender-related homophily (Hypotheses five and six). We consider characteristics of investments, investors, ventures, and campaigns that might play a role in explaining investment decisions. Different from Günther, Johan, and Schweizer (2018) who use the great-circle distance, we compute the geodesic distance between investor and venture in each individual investment using the formulae developed by Vincenty (1975). The natural logarithm of distance is then incorporated in regressions[5]. Besides distance and gender of investors, we add in the first category dynamic (investment variant) characteristics of investments like investors and capital that have been accumulated and competitive campaigns available for investment on the platform up to the moment of each individual investment decision. We also control for weekday and month fixed effects. The second category includes selected characteristics of individual investors. These characteristics could be directed to a certain investor (like her gender, location, ventures and capital she invest over the whole observation period) or common among a certain group of investors (like those related to diversification need, risk preferences, and income deciles). The former are usually observable or measurable, while the latter are often unmeasurable and have to be estimated. In the venture-related category, we incorporate selected features of top management team (TMT) like gender composition, ownership of doctoral title and MBA degree. Venture-specific characteristics such as location, age, development stage, legal form, and patent ownership are added in the regressions. The fourth category consists of features that are directly related to the funding campaign and investment invariant, such as financing instrument, co-investment, and videos posted on the site to present the venture and attract crowd investors. Moreover, to count for the market development of the equity crowdfunding market as well as potential changes related to the platform like the structure of the platform, the advisory policy, we include campaign year fixed effect. The four categories of variables are discussed in detail in section 3.2.

In addition to distance sensitivity, we construct measures of local bias and examine them across investor groups. Following Coval and Moskowitz (1999), Cumming and Dai (2010), and Hornuf, Schmitt, and Stenzhorn (2020), we calculate two measures of local bias: local bias of individual investment and local bias of individual investor's portfolio. They show how individual investments and portfolios of individual investors are divergent from the average neutral investment and the neutral benchmark portfolio in terms of distance, respectively. If investors are not location-biased, they should take a value of zero. Positive values indicate decisions in favor of local firms, while negative values imply distant firms are preferred. We expect the two local bias measures to be positive for both male and

[5] Great-circle distance assumes a spherical Earth, while the Vincenty's formulae are based on an ellipsoidal model of the Earth. Both are widely used to calculate the geodesic distance between two points on the surface of the Earth. Nevertheless, the Vincenty's formulae deliver result that is more accurate. We compute the Vincenty distance with the World Geodetic System-84 ellipsoid.

female investors and return greater values for female investors (Hypotheses two and four). To investigate whether mean and median local bias measures significantly differ from zero and positive, we conduct one-sample t tests and Wilcoxon signed rank tests, respectively. To examine whether different investor categories (like male versus female, domestic versus overseas) exhibit local bias to different degrees, we further conduct two-sample t tests with unequal variance for mean equality and Wilcoxon rank sum tests for median equality in the presence of skewed local bias data. Computation of these two measures are presented in Appendix 1.

3.2 Variables and Model Specification

Our main regression model is:

$$\ln(\text{amount}_{ij}) = \alpha_{ij} + \beta_{1\,ij} \ln(\text{distance}_{ij}) + \beta_{2\,ij} \text{Female}_{ij} + \beta_{3\,ij} \text{Other investment} - \text{related variables}_{ij} + \beta_{4\,ij} \text{Investor} - \text{related variables}_{ij} + \beta_{5\,ij} \text{TMT\_Female}_{ij} + \beta_{6\,ij} \text{Other venture} - \text{related variables}_{ij} + \beta_{7\,ij} \text{Campaig} - \text{related variables}_{ij} + \beta_{8\,ij} \ln(\text{distance}_{ij}) \text{ x Female}_{ij} + \beta_{9\,ij} \text{Female}_{ij} \text{ x TMT\_Female}_{ij} + \beta_{10\,ij} \ln(\text{distance}_{ij}) \text{ x TMT\_Female}_{ij} + \varepsilon_{ij}$$

The dependent variable is individual investment decision. It is measured as the natural logarithm of amount of capital in each individual investment.

The first category of independent variables consists of factors related to the individual investment. As the measure of distance, the natural logarithm of the distance between the investor and the venture is employed[6]. We expect the distance variable to have a significant and negative coefficient, which indicates investors are distance sensitive and pledge less into geographically distant ventures. The dummy variable *Female* takes a value of one if the capital is from a female investor and zero otherwise. A significant positive coefficient implies that female investors pledge more capital into ventures in equity crowdfunding than their counterparts do. Three dynamic (investment variant) variables are further incorporated in the regression models. *Cum. # Investor* and *Cum. Amount%target* reflect funding dynamics as well as attractiveness of ventures. The former measures how many investors have invested into the venture by one day prior to the investment decision, while the latter shows the amount of capital accumulated by the venture up to one day prior to the investment decision. Particularly, they both proxy information cascade among investors which has been demonstrated to play a role in equity crowdfunding by studies from, for instance, Vismara (2018) and Hornuf and Schwienbacher (2018). The effects of these two variables need to be examined carefully. One the one hand, they might be negatively related to the investment amount. In equity crowdfunding, the venture sells a pre-determined number of shares in ownership or profit participation (Hornuf and Schwienbacher, 2018).

[6] We use an alternative measure of distance in robustness check in section 4.4. It is a dummy variable which takes the value one if the venture is located in the same state as the investor and zero otherwise.

Considering that other investors have pledged money and bought shares, an individual might decide not to invest fearing potential equity dilution. On the other hand, the more attractive the venture seems, the more likely the late-coming investor is to herd and pledge money. *#Available ventures* is the number of all the ventures available on the platform in the period four weeks before and four weeks after the individual investment. Fierce competition on the platform satisfies the need of investors for diversification and reduces the attractive of a single venture. *Weekday* and *month* dummies are also added to eliminate any time variant effect.

The second category of independent variables is related to investors. The number of ventures and the amount of capital (in thousand) invested by the individual investor over the whole sample period (*#Venture invested* and *Total amount*) are included to account for potential influence of diversification need and risk attitude. The more need for diversification the investor has, the more ventures she invests and the less she invests in a single venture. Therefore, we suppose the former is negatively associated with the investment amount. The latter is expected to have a positive effect on the investment decision, since a greater amount of capital totally invested implies smaller risk aversion with regard to equity crowdfunding campaigns and a larger amount of capital available for investments. These variables can deserve as good proxies of investors' financial literacy (Abreu and Mendes, 2010; Hornuf, Schmitt, and Stenzhorn, 2020). Moreover, we categorize investors into ten deciles based on the amount of capital they have invested on Companisto by the end of the sample period. The variable *Decile_total amount* is designed for unobservable characteristics that are shared across groups of investors (such as income deciles, risk attitudes, and favoritism to Companisto in different degrees). We employ the dummy variable *Overseas* to distinguish domestic and foreign investments and divide the sample into two corresponding subsamples. *Companist state* dummies are included to take account of any (observable and unobservable) heterogeneity among the German federal states in social, political, economic, and cultural dimensions.

The third category consists of venture-specific factors. It first includes characteristics of the top management team (TMT) which have influence venture performance and hence are considered by investors when selecting ventures. We consider as TMT members founders who are holding Chief Executive Officer (CEO) or managing director positions in the venture. We also count founders holding other positions in the venture in TMT members. We notes that, in the equity crowdfunding market, most ventures are young businesses and mainly founded without external investors. Their founders are either managing directors or holding other important managerial positions. Therefore, founders not holding managing director positions are also counted in to control for potential persistent influence of founders. Previous studies confirm that certain entrepreneurial characteristics (such as size of the team, gender, education, social ties, and personal values) are associated with venture performance in terms of longevity, financial strength, and profitability (such as Bates 1990;

Eisenhardt and Schoonhoven, 1990; Haleblian and Finkelstein, 1993; Tang, Kreiser, Marino and Weaver, 2010). For instance, Ling, Zhao and Baron (2007) evidence that founder CEOs' personal value like collectivism and novelty influence their new venture performance. Especially, Nelson (2003) reports a strong association between the presence of founder CEOs in the venture and the financing results of the venture: Investors react more strongly to firms with founder executives. Moreover, Hsu (2007) finds that a doctoral degree holder in the founder team contributes to raising capital from venture capital. Investors in equity crowdfunding tend to show a preference for founder teams over solo founders launching initial campaigns (Coakley, Lazos, and Liñares-Zegarra, 2021). Based on finding of previous studies, we include in this category the size of the top management team *TMT_size*, ownership of doctoral title *TMT_Dr* to capture the influence of human capital, and ownership of MBA degree *TMT_MBA* for social capital the venture has accumulated. It also includes a dummy variable *TMT_Female* which indicating whether the venture has at least one female TMT member. This variable investigates influence of the TMT gender composition on investment decisions. Especially, a significant positive coefficient of the interaction term between this variable and the *Female investor* variable will provide evidence for the existence of gender-based homophily. The dummy variable *Financial Info* indicates availability of financial reports on the German company register Bundesanzeiger. Two dummy variables *Government Loan* and *Award*– being supported by government loan and ownership of awards - serve as third-party accreditation and recognition. Track records and third-party accreditation should contribute to signalling venture quality to potential investors and reducing information asymmetry between ventures and investors. Therefore, we expect this variable to have a positive influence on the investment amount. *EarlyCI* is a dummy variable taking the value of one in case that the venture has already successfully pursued equity-based crowdfunding earlier and zero otherwise. Ventures launching following-up campaigns might be capable of better presenting themselves and their projects, while the success of previous financing round conveys positive information to crowd investors about the accreditation of other investors, the development of the business, and the promise of the venture. We agree with Hornuf and Schwienbacher (2015) that more follow-up equity crowdfunding could occur in the future and expect this variable to have a significant influence on investment decisions. *EarlyInvestor* is added to take account of the influence of existing external investors like business angels and venture capital companies. The presence of external investors prior to the funding campaign functions as a positive signal to investors of quality and promise of the venture. We incorporate *Company age* into the model. On the one hand, investors might be more likely to conceive of relatively mature ventures as less risky. On the other hand, they might be undecided about financing a mature company, thinking it less capable of rapidly growing and generating large profits. That means company age might have a curvilinear influence on funding results. Considering this possibility, we add the quadratic form of company age in the model. Ignoring the quadratic form, previous studies do not

provide robust evidence on the relationship between company age and funding performance (such as Ahlers, Cumming, Günther and Schweizer, 2015; Hornuf and Schwienbacher, 2015). *Patent* is a dummy variable used to control for intellectual capital of the venture. Patent ownership serves as a signal of the venture's innovative capacity, competitiveness, and future survival. Vismara (2016) confirms that patent ownership contributes to a venture attracting sophisticated investors at the early stage, although it does not play a role in the campaign success. Ventures in the software/IT sector are often viewed as with high risk yet high return, therefore, investment decisions might vary between them and ventures in the other industry sectors. We add the *Software/IT* dummy variable in the regression. Similarly, we add the dummy variable *Stage_Seed/Early*. *GmbH* is a dummy variable controlling for the different ventures' legal registration forms and corresponding common characteristics within each. Besides, we have noticed that the analysis regarding local bias in equity crowdfunding might suffer from endogeneity problem. Ventures in equity crowdfunding might be more likely to be located in metropolitan areas e.g. to be closer to a bigger pool of investors or networks. They might have higher attractiveness due to their location in densely populated areas. To account for this potential endogeneity problem regarding distance, we include big city fixed effect. Five big cities are considered (Hamburg, Berlin, Cologne, Frankfurt, and Munich). Berlin and Cologne are included due to its customer base, international investor base, university population and great start-up environment, Hamburg for new media centres, Frankfurt for financial services, and Munich for hard-core (med) technology and university population.

The last category represents campaign-specific characteristics. Funding target (in millions) and proportion of shares offered to investors in profit and value participation are contained in this category. A higher amount of funding target indicates venture managers are confident about their projects. The effect of share offered needs a careful examination. On the one hand, more shares offered through equity crowdfunding might send a negative signal to the crowd investors that managers are not confident about the promise of their projects and sell their shares in exchange of capital. On the other hand, it indicates the venture could be backed by more investors and more likely to raise capital more than the funding threshold[7]. It is also considered in the regression model which financing instrument is employed in the campaign. *Participation right*, *voting right*, *silent partnership*, loan, *profit participating loan*, and *shares* are available as financing instruments in the German equity crowdfunding market. *Co-Financing* is a dummy variable taking account of the fact that on Companisto it is possible for ventures to launch equity crowdfunding campaigns while being simultaneously co-invested by professional investors. Companisto adds tags and question marks showing explanations to such campaigns and calls for attention to contracts terms and conditions that are potentially dissimilar to those in pure equity

[7] Companisto employs an All-Or-Nothing approach. Investments through equity crowdfunding take place only if the venture reaches its planned funding threshold during the campaign window.

crowdfunding campaigns. Co-investment from professional investors signals accreditation of quality and promise of the project from third parties and contributes to attracting more capital from the crowd investors. Coakley and Lazos (2021) state that the co-financing mechanism contributes to the outstanding development of equity crowdfunding in the United Kingdom[8]. We believe this mechanism will gain popularity in the German market in the near future. The number of videos and the number of letters and characters in the description (in thousands) are included in this category. These factors help ventures arouse the interest of crowd investors, signal venture quality to them, and hence contribute to the funding success. Mollick (2014) employs the presence of a pitch video to proxy the venture quality. Crosetto and Regner (2014) confirms the influence of the number of words and videos on funding results, especially in the starting phase of the campaign. Moreover, to count for the market development of the equity crowdfunding market as well as potential changes related to the platform like the structure of the platform and the advisory policy, we include *campaign year* fixed effect. Appendix 2 provides an overview of variables used in the regression analyses and their definitions.

3.3 Data

Our analyses rely on hand-collected data on individual investments on Companisto. Venture- and campaign- related data are extracted from Companisto's website on May 16, 2019, while investment- and investor-related data are scraped from the website on May 17, 2019[9]. We initially collected information about 104 finished campaigns. Four of them are excluded since no information about investors is available on the platform[10].

For each individual investment, we collect information on the amount of capital, the date, the investor with unique user id, and dynamically updated rank. Moreover, we extract the following voluntary disclosures from the investor: first and last name, default image selected by the investor to indicate gender or own image uploaded by the investor, and current location. Same as Hornuf, Schmitt, and Stenzhorn (2020), we assume that investors have no incentive to misrepresent their name, sex, and place of living[11]. In this step, we have to exclude another three campaigns "Panono", "MyParfum", and "MyCouchbox" since the number of investor names we scraped does not equal the number of investors given by Companisto on the campaign page. Checking investments in each venture, we notice that 3,552 investors made follow-on investments, while for each investor all of the follow-on investments take place on the same date as their first investment in each

[8] See: Coakley, Lazos, and Liñares-Zegarra (2021), p. 2.
[9] We note that our investment data are collected following an ex-post approach, as no information is provided on the platform about investments withdrawn during each campaign. Hornuf and Schwienbacher (2018) examine data from four German platforms (including Companisto) and find that 0.21% of 26,967 investments are withdrawn. Based on their findings, we propose that a negligible proportion of investments are withdrawn during campaigns contained in our dataset, which will not bias our results.
[10] They are "Weissenhaus", "Weissenhaus 2", "Companisto 1", and "AMERIA".
[11] See: Hornuf, Schmitt, and Stenzhorn (2020), p. 17.

corresponding venture. Therefore, we merge them into their first investment in each corresponding venture. To identify gender of the investor, we check default image selected by the investor and extract gender information. If the investor instead uploads own image, we use the Python package "*gender guesser*" to infer gender from the first name of the investor. Analyzing the first name, the package can return one of the following six values: male, female, mostly male, mostly female, andy 50%-50%, unknown name not found in the dataset. We kept only values "male" and "female" in the dataset.

In order to calculate distance between the investor and the venture for each investment decision, we further need information about location of the venture. We extract location of the venture from the campaign webpage and compare it with information obtained from Bundesanzeiger. If they are not identical, we use the latter one for the calculation. If an investor only gives the federal state name, we assign him to the center of the state. We then employ the *ArcGis geocoding* module in Python to convert venture and investor locations into coordinates and the *geodesic* module in Python to calculate the distance. Investments for which no location information is offered or the location could not be uniquely identified are excluded from the dataset. After this step, our sample is reduced to 62,871 investments from 20,332 investors.

Besides, investments from company investors are excluded since we cannot analyze the gender information of these investors. On Companisto, ventures normally have two months to surpass the investment threshold (usually set at 100,000 euros), but there are also cases that campaigns are extended for another two months. Subsequently, we only consider investments taking place in the first 120 days after campaign start. Appendix 3 provides an overview of the sample reduction process.

Our final dataset consists of 58,404 individual investments from 19,328 investors in 97 ventures (199 investors financing an average venture). It covers the period from the inception of the platform June 2012 to May 17, 2019. Hornuf, Schmitt, and Stenzhorn (2020) base their analyses on a dataset of 20,460 investments by 6,599 investors in 74 ventures between November 2011 and August 2014, an average venture attracting 89 investors)[12]. Compared to their dataset, our dataset covers a significantly wider investor base, which indicates not only the success of equity crowdfunding in Germany but also the potential more divergent attributes among investors involved such as personal values, risk aversion, and financial literacy.

[12] See: Hornuf, Schmitt, and Stenzhorn (2020), p. 35.

4 Results

4.1 Descriptive Statistics

Table 1 presents descriptive statistics of investment variables.

Table 1: Descriptive Statistics of Investment Variables

Investment variable	N	Mean	Median	Std. Dev.	Min.	Max.
Amount	58404	657.6066	200	1575.917	4	50000
Distance	58404	419.0657	383.4546	764.685	0.1419	18553.72
Same state	58404	0.1137	0	0.3174	0	1
Female investor	58404	0.1043	0	0.3057	0	1
Cum.#Investor	58404	378.4253	319	318.7372	0	1649
Cum. Amount%target	58404	0.4512	0.3666	0.3989	0	2.4094
#Available venture	58404	2.9907	3	1.171383	1	8
Weekday	58404	2.8310	3	1.7567	0	6
Monday	58404	0.1662	0	0.3722	0	1
Tuesday	58404	0.2200	0	0.4143	0	1
Wednesday	58404	0.1576	0	0.3644	0	1
Thursday	58404	0.1524	0	0.3594	0	1
Friday	58404	0.1313	0	0.3378	0	1
Saturday	58404	0.0809	0	0.2727	0	1
Sunday	58404	0.0915	0	0.2883	0	1
Month	58404	6.5431	7	3.5275	1	12
January	58404	0.0988	0	0.2984	0	1
February	58404	0.0804	0	0.2719	0	1
March	58404	0.0807	0	0.2724	0	1
April	58404	0.0728	0	0.2598	0	1
May	58404	0.0681	0	0.2519	0	1
June	58404	0.0908	0	0.2873	0	1
July	58404	0.0775	0	0.2674	0	1
August	58404	0.0764	0	0.2656	0	1
September	58404	0.0888	0	0.2845	0	1
October	58404	0.0953	0	0.2936	0	1
November	58404	0.0861	0	0.2804	0	1
December	58404	0.0844	0	0.2780	0	1

The amount of individual investments ranges widely from 4 euros to 50,000 euros, averaging at 657.61 euros. Median investment is 200 euros, varying much from the mean investment. An average investment is made to a venture located 419.07 kilometers away from the investor. The median distance from the investor to the venture is 383.45 kilometers. Hornuf, Schmitt, and Stenzhorn (2020) observe an average investment amount of 526 euros (332 euros in case only investments on Companisto are considered) and an

average distance of 371 kilometer. Therefore, our data are comparable yet implying a lesser distance sensitivity. This further confirms that it is worth exploring the local bias issue with recent data. 11.37% of investments are from investors in the same state. 10.43% of investments are from female investors. An average investment decision is made when the venture has accumulated 45.12% of its funding target from 378 investors. For an average investment decision, there are three ventures seeking capital and available for investment on the platform. The largest number of investments take place on Tuesday and in January; nevertheless, investments distribute overall evenly among the five business days as well as the twelve months. Appendix 4 shows geographic distribution of individual investments. Among the sample investments, 51,350 are domestic investments, with 17.05% and 17.28% made by investors in Bavaria and North Rhine-Westphalia, respectively. Of the 7,054 cash inflows, 6,446 (91.38%) are from the European Free Trade Association member countries and the United Kingdom.

Table 2: Descriptive Statistics of Investor Variables

Investor variable	N	Mean	Median	Std. Dev.	Min.	Max.
Female	19328	0.1639	0	0.3702	0	1
# Ventures invested	19328	3.2508	1	5.2208	1	91
Total amount invested	19328	2124.403	500	5600.734	4	115000
Decile_total amount	19328	3.8111	3	2.7052	1	10
Overseas	19328	0.1256	0	0.3314	0	1
Domestic Investor State	19328					
Baden-Württemberg	19328	0.1234	0	0.3290	0	1
Bavaria (Bayern)	19328	0.1455	0	0.3526	0	1
Berlin	19328	0.1267	0	0.3326	0	1
Brandenburg	19328	0.0183	0	0.1341	0	1
Bremen	19328	0.0078	0	0.0878	0	1
Hamburg	19328	0.0466	0	0.2107	0	1
Hesse (Hessen)	19328	0.0694	0	0.2541	0	1
Lower Saxony	19328	0.0642	0	0.2450	0	1
Mecklenburg-	19328	0.0084	0	0.0912	0	1
North Rhine-Westphalia (Nordrhein-Westfalen)	19328	0.1514	0	0.3584	0	1
Rhineland-Palatinate (Rheinland-Pfalz)	19328	0.0277	0	0.1641	0	1
Saarland	19328	0.0071	0	0.0839	0	1
Saxony (Sachsen)	19328	0.0289	0	0.1676	0	1
Saxony-Anhalt (Sachsen-Anhalt)	19328	0.0107	0	0.1029	0	1
Schleswig-Holstein	19328	0.0253	0	0.1570	0	1
Thuringia (Thüringen)	19328	0.0131	0	0.1139	0	1

Descriptive statistics of investor variables are shown in Table 2. 19,328 individual investors are included in our sample. 16.39% of them are female. On average, each investor invests 2,124.40 euros to three ventures on the platform[13]. Based on the total amount of capital they invested on the platform, individual investors are grouped into ten deciles, half of them from the third decile. Our dataset consists of 16900 domestic investors (87.44%) and 2,428 overseas investors. The former distribute not evenly among the federal states. For instance, 29.69% of domestic investors are living in Bavaria and North Rhine-Westphalia, 25.01% are clustered in Baden-Württemberg and Berlin, and 0.71% are from Saarland.

Table 3: Descriptive Statistics of Venture Variables

Venture variable	N	Mean	Median	Std. Dev.	Min.	Max.
TMT_Female	97	0.1340	0	0.3424	0	1
TMT_Size	97	2.2165	2	0.9919	1	5
TMT_Female #	97	0.1649	0	0.4491	0	2
TMT_Female Ratio	97	0.0713	0	0.2083	0	1
TMT_Dr	97	0.2062	0	0.4067	0	1
TMT_MBA	97	0.1237	0	0.3310	0	1
Company age	97	6.7403	2	14.3374	0	135
Stage_seed/early	97	0.9278	1	0.2601	0	1
Software IT	97	0.2474	0	0.4338	0	1
GmbH	97	0.8557	1	0.3533	0	1
Financial Report	97	0.3402	0	0.4762	0	1
Government loan	97	0.1237	0	0.3310	0	1
Award	97	0.2887	0	0.4555	0	1
Patent	97	0.1546	0	0.3634	0	1
Early CI	97	0.0928	0	0.2916	0	1
Early Investors	97	0.7423	1	0.4397	0	1
5BigCities	97	0.9897	1	1.1410	0	5
Berlin	97	0.4742	0	0.5019	0	1
Hamburg	97	0.0722	0	0.2601	0	1
Frankfurt am Main	97	0.0103	0	0.1015	0	1
München	97	0.0722	0	0.2601	0	1
Köln	97	0.0103	0	0.1015	0	1
Other Cities	97	0.3608	0	0.4827	0	1

Table 3 provides an overview of the venture variables. The average age of the sampled ventures is 3.54 years and the median age is 2 years. The sampled ventures have a small and male-dominated founder and managing director team: The average team consists of two members, while only 13.40% of ventures has at least one female manager directors.

[13] Hornuf, Schmitt, and Stenzhorn (2020) observe that an average investor provides 1,630.97 euros in total.

Ventures seeking equity crowdfunding on Companisto are young: 59.79% of ventures have developed for 2 years or shorter, while 83.51% have existed for 5 years or shorter. The median age of the ventures is 2 years. When starting their equity crowdfunding campaigns, 95 ventures are younger than 30, one is at the age of 31, and one venture is at the age of 135. The last two observations level the mean age up to about 6.74 years. 92.78% of ventures are in early or seed stage. All these figures are in line with the fact that young and small business are the main player in the German equity crowdfunding market. 85.57% of the sample ventures are in the form of GmbH ("Gesellschaft mit beschränkter Haftung", the German form of Limited Liability Company). For 34.02% of the ventures, financial reports are available on Bundesanzeiger for at least one of the two years prior to the campaign start. 12.37% of ventures have received government loans, while 28.87% have received awards and posted on the description page. 15 ventures (15.46% of the 97 sampled ventures) claim that they own patent or have submitted patent applications. Nine ventures (9.28%) launched follow-up campaigns, while 72 ventures (74.23%) have raised capital from investors including business angels and venture capital companies before their campaigns on Companisto started. 98.97% of ventures are located in the big five cities, especially 47.42% are in Berlin where the platform is based.

Table 4: Descriptive Statistics of Campaign Variables

Venture variable	N	Mean	Median	Std. Dev.	Min.	Max.
Target_million	97	0.5835	0.4	0.6729	0.05	5
Share	97	0.1164	0.108	0.0767	0	0.375
FI_Loan	97	0.0619	0	0.2421	0	1
FI_Profit participating loan	97	0.8454	1	0.3634	0	1
FI_Silent Partnership	97	0.0825	0	0.2765	0	1
FI_Share	97	0.0103	0	0.1015	0	1
Co-Financing	97	0.0515	0	0.2223	0	1
Description_thousand	97	3.7818	3.607	1.0838	2.007	6.901
No Videos	97	1.3608	1	1.0019	1	8
Year_Campaign	97	2015.423	2016	1.8921	2012	2018
2012	97	0.0619	0	0.2421	0	1
2013	97	0.1753	0	0.3822	0	1
2014	97	0.0825	0	0.2765	0	1
2015	97	0.1443	0	0.3532	0	1
2016	97	0.1959	0	0.3989	0	1
2017	97	0.1753	0	0.3822	0	1
2018	97	0.1649	0	0.3731	0	1

Table 4 shows characteristics of the funding campaigns. On average, ventures seek to raise 0.58 million euros through selling 11.64% of their shares. 84.54% of ventures select profit participating loan as the financing instrument, while the other employ loan, silent partnership, or share. Five ventures are co-invested by professional investors in addition to

the investments on the platform[14]. The average venture employs 3,781.85 characters (including letters, numbers, spaces, and punctuation marks) and 1.36 videos to present its project on the platform. Although the dataset consists of investment decisions on Companisto by May 17, 2019, the sampled ventures launched their campaigns during the period from 2012 to 2018. After an upsurge from six in 2012 to 17 in 2013, the number of campaigns falls back to eight in 2014 and recovered to 14 in 2015. It then peaked at 19 in 2016 and stayed stable afterwards.

Appendix 5 present descriptive statistics of continuous variables based on the winsorized dataset. We also test for multicollinearity. Pairwise correaltion matrix and variance inflation factors (VIF) values of the continuous variables are shown in Appendix 6. The relatively high correlation between *Cum.# Investor* and *Cum. Amount%Target* is attributed to the way we design them: they both indicate funding dynamics and capture the potential influence of information cascade among investors. They both are calculated based on funding results by one day prior to the investment decision. The VIFs of all non-categorical variables are smaller than four, averaging at 1.73 for the domestic investor sample and 1.75 for the overseas investor sample. Consequently, we assume that our regression results are not be biased by multicollinearity.

4.2 Tests of Local Bias of Individual Investments and Investors' Portfolios

Table 5 presents summary statistics of local bias of individual investments as well as local bias of investor portfolios. Local bias of individual investments is widely distributed between -3.84 and 1, averaging at 0.1101. This positive value indicates capital is more likely to be directed to local ventures. Of the 58,494 individual investments, 31,507 and 26,897 investments display positive and negative local bias, respectively. This results in a positive median investment local bias of 0.0069. The one-sample t test confirms the significance of the positive mean investment local bias; while the Wilcoxon signed rank test shows that the positive median investment local bias is significantly different from zero. These results provide evidence that individual investments are distance biased and made in favor of geographically closer ventures. Hypothesis 2 is confirmed at the individual investment level. Compared to the mean investment local bias 0.012 and median investment local bias -0.001 estimated by Hornuf, Schmitt, and Stenzhorn (2020), our findings provide evidence that later comers have less financial literacy and are more likely to be location biased than their precursors.

Looking at investors' portfolios, we find an average investor displays a significant positive local bias. It indicates that the investor prefer investing in geographically closer ventures. This is supported by results of the one-sample t test. Nevertheless, the median portfolio

[14] The five ventures are MeineSpielzeugkiste 3, Nepos, Pumperlgsund, Replicate System, and itravel. Companisto states the contracts and conditions in the co-financing case might differ from those in the pure equity crowdfunding case.

local bias is negative and, based on results of the Wilcoxon signed rank test, significant at 0.1% level. This result suggests that half of the investors pledge capital into more distant ventures. One possible explanation to this finding could be the disparity of portfolio local bias among investor groups, disparity between females and males, between domestic and overseas investors. Moreover, we note that our portfolio local bias measure fluctuates largely among investors, ranging from -8.5207 to 0.9993. In comparison, Hornuf, Schmitt, and Stenzhorn (2020) report a mean portfolio local bias of 0.101 and a minimum value of -4.974, while providing no information about the median value. We argue that the wider range of our portfolio local bias measure can be first attributed to different gender and country compositions of investors in our sample. For instance, 12.56% of investors are foreign investors compared to 10.94% reported by Hornuf, Schmitt, and Stenzhorn (2020). The possibility that some domestic investors in our sample might construct well-diversified portfolios cannot be ruled out either. From these considerations, we employ two approaches: First, as a robustness check, we winsorize our local bias measures at the 5% and 95% percentiles to handle possible outliers. Appendix 7 provides results based on the winsorized dataset. We obtain similar results about investment local bias, while portfolio local bias ranges from -0.3636 to 0.7787 and averages at 0.0751. The mean portfolio local bias is still significantly different from zero at 0.1% level. Hypothesis 2 is confirmed at the investor portfolio level. Second, we decompose our local bias measures and test for potential disparity across investor groups in the next step.

Table 5: Summary Statistics of Investment Local Bias and Investor Local Bias

Local Bias_Investment	N	Mean	Median	Std. Dev.	Min.	Max.
Overall	58404	0.1101****	0.0069****	0.5376	-3.8354	1
Positive	31507	0.4638	0.3561	0.3835	0.0000101	1
Zero	0	0	0	0	0	0
Negative	26897	-0.3043	-0.1944	0.3680	-3.8354	-0.00000444
Local Bias_Investor	N	Mean	Median	Std. Dev.	Min.	Max.
Overall	19328	0.0734****	-0.0076****	0.4509	-8.5207	0.9993
Positive	9354	0.4236	0.2992	0.3474	0.0000934	0.9993
Zero	164	0	0	0	0	0
Negative	9810	-0.2594	-0.2212	0.2401	-8.5207	-0.000120

Table 6 provides an overview of local bias of investments from different investor groups. To test whether the mean investment local bias varies much across these groups, we conducted two-sample t tests with unequal variances. Taking into account that the investment local bias data are skewed to the right, we also examine the equality of the median investment local bias across these groups. We conduct two-sample Wilcoxon rank-sum (Mann-Whitney) tests and median regressions with each corresponding category variable. Overall, investments from females exhibit a stronger positive local bias with larger mean and median values. The difference is significant at the 0.1% level. This also

holds for female home country investors. An average investment from overseas female investor displays a stronger positive local bias than an average investment from overseas male investor. The difference is significant at 5% level. Results of the rank sum test provide no evidence for a significant difference in median investment local bias between overseas female and male investors. Overall, investments from home country investors are more distance biased than their counterparts. Their mean as well as median local bias measures are significantly greater. Hypothesis 4 is confirmed overall as well as for domestic investors at the individual investment level. Similar results are obtained using winsorized data, as shown in Appendix 8.

Table 6: Tests of Local Bias of Individual Investments across Investor Groups

Investment from	N	Mean	Median	Std. Dev.	Min.	Max.
Male	52312	0.1038	0.00605	0.5353	-3.8354	1
Female	6092	0.1644	0.0209	0.5540	-2.8693	1
Difference		-0.0606****	-0.0149****			
Overseas	7054	0.0900	0.00334	0.3956	-1.1008	1
Domestic	51350	0.1129	0.00834	0.5542	-3.8354	1
Difference		-0.0463****	-0.0050****			
Domestic male	45947	0.1061	0.00658	.5519	-3.8354	1
Domestic female	5403	0.1706	0.02901	.5697	-2.8693	1
Difference		-0.0645****	-0.0224****			
Overseas male	6365	0.08717	0.00349	0.3942	-1.1008	1
Overseas female	689	0.1159	0.00251	0.4081	-0.9038	1
Difference		-0.0281**	0.000981			

Table 7 presents summary statistics of portfolio local bias of individual investors' portfolios. Again, we conduct two-sample t test with unequal variance to investigate mean equality of portfolio local bias across investor groups. Two-sample Wilcoxon rank-sum (Mann-Whitney) tests and median regressions are used to examine whether the median portfolio local bias varies significantly among these groups. Overall, females exhibit stronger positive local bias than males. The difference in the mean as well as in the median local bias is statistically significant at the 0.1% level. However, this pattern is attributed to the disparity in portfolio local bias between domestic male and female investors. Local bias does not vary significantly among portfolios constructed by overseas female investors and their counterparts. The mean and the median local bias are negative among overseas investors, regardless of their gender. This indicates that they make investment decisions in favor of distant ventures. Local bias of portfolios constructed by domestic investors averages at 0.0892, implying that domestic investors exhibit positive local bias. The median portfolio local bias is zero for domestic investors. Results of the one-sample t test and the Wilcoxon signed-rank test imply that the mean and median local bias differs significantly from zero, respectively. In contrast, the portfolio local bias of overseas

investors is negative in terms of both mean and median. Moreover, the one-sample t test and the Wilcoxon signed-rank test provide evidence that the negative local bias measures are significantly different from zero. Both Hypothesis 2 and Hypothesis 4 are substantiated at the portfolio level overall as well as for domestic investors. Besides, we observe the minimum portfolio local bias of domestic male investors is – 8.5207, which provides support to our argument that some investors in our dataset construct well-diversified portfolios and hence might have high financial literacy level. This also confirms the need for handling these "outliers" in the regression analyses in the next step. After winsorizing data at the 5% and 95% quantiles, portfolio local bias ranges from -0.3636 to 0.7787. We re-conduct the tests with the winsorized dataset and obtain similar results. Results are shown in Appendix 9.

Table 7: Tests of Local Bias of Investor Portfolios

Investors	N	Mean	Median	Std. Dev.	Min.	Max.
Male	16161	0.0594	-0.0134	0.4371	-8.5207	0.9993
Female	3167	0.1446	0.0263	0.5095	-4.2339	0.9988
Difference		-0.0851****	-0.0398****			
Overseas	2428	-0.0367	-0.0409	0.2539	-0.7098	0.9982
Domestic	16900	0.0892	0	0.4703	-8.5207	0.9993
Difference		-0.1259****	-0.0406****			
Domestic male	14075	0.0737	-0.00282	0.4565	-8.5207	0.9993
Domestic	2825	0.1665	0.0575	0.5272	-4.2339	0.9988
Difference		-0.0928****	-0.0603****			
Overseas male	2086	-0.0367	-0.0420	0.2518	-0.7098	0.9979
Overseas female	342	-0.0368	-0.0309	0.2668	-0.6318	0.9982
Difference		0.000126	-0.0102			

4.3 Results of Regressions on Individual Investments

To investigate the influence of geographic proximity on investment decisions, we regress the amount of capital from individual investments on venture-, campaign-, investment-, and investor-related variables[15]. For the reasons stated in section 4.2, we winsorize all continuous variables at the 5% and the 95% levels. Regressions are separately for investments from domestic and overseas investors. Results are shown in Table 8. The dependent variable in all the models is the natural logarithm of amount of capital from individual investments. Robust standard errors are presented in brackets.

The baseline model, model 1, only includes investment- and investor-related independent variables. The number of ventures and the amount of capital invested by the same investor

[15] Hornuf, Schmitt, and Stenzhorn (2020) do not examine the influence of distance on investment amount. Instead, they use local bias of individual investments as measure of investment decision and regress it on investor type, investor characteristics, firm-specific characteristics, and funding dynamic proxies.

at the moment of each investment decision are included to control for potential influence of diversification need and risk attitude. Moreover, we categorize investors into ten deciles based on the amount of capital they have invested on Companisto by the end of the observation window. The decile dummies are designed for unobservable characteristics that are shared across groups of investors (such as income deciles, risk attitudes, and favoritism to Companisto in different degrees). Companist state dummies are included to take account of any (observable and unobservable) heterogeneity among states in social, political, economic, and cultural dimensions. We also add weekday and month dummies to eliminate any time variant effect. Overall, the model is significant at 0.1% level and explains 69.3% of variances in the investment amount variable. The coefficient of the distance variable is negative and significant at the 0.1% level, which means geographic proximity has significant positive influence on the amount of capital pledged. The coefficient of female investor is positive and significantly different from zero at the 0.1% level. This implies that female investors pledge a larger amount of capital in equity crowdfunding campaigns.

Table 8: Results of Regressions for the Domestic Investment Sample

	(1) Ln(amount)	(2) Ln(amount)	(3) Ln(amount)	(4) Ln(amount)	(5) Ln(amount)	(6) Ln(amount)
TMT_Female			-0.0240*	-0.0249**	-0.0338**	0.0518
			[0.0125]	[0.0125]	[0.0132]	[0.0440]
Ln(distance)	-0.0401****	-0.0364****	-0.0331****	-0.0298****	-0.0299****	-0.0273****
	[0.00400]	[0.00420]	[0.00389]	[0.00408]	[0.00408]	[0.00431]
Female	0.132****	0.268****	0.117****	0.239****	0.220****	0.212****
	[0.0129]	[0.0441]	[0.0126]	[0.0439]	[0.0447]	[0.0447]
Ln(distance) #Female		-0.0262***		-0.0233***	-0.0223***	-0.0207**
		[0.00823]		[0.00816]	[0.00817]	[0.00819]
TMT_Female #Female					0.0657**	0.0605**
					[0.0304]	[0.0305]
Ln(distance) #TMT_Female						-0.0159**
						[0.00783]
Other Investment Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture Var.	No	No	Yes	Yes	Yes	Yes
Campaign Var.	No	No	Yes	Yes	Yes	Yes
N	51350	51350	51350	51350	51350	51350
Adj. R2	0.693	0.693	0.716	0.716	0.716	0.716
AIC	134060.2	134053.1	130050.1	130044.4	130041.9	130039.9
BIC	134467.1	134468.9	130766.7	130769.8	130776.1	130791.9
F	3123.6	3058.2	2101.8	2077.3	2052.7	2004.3
P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Model 2 extends the baseline model by adding the interaction term between distance and female investor. The negative and significant coefficient of this interaction term shows that geographic distance matters more to female investors. Female investors are more distance-sensitive.

Extending the baseline model, model 3 incorporates in the regression all the venture- and campaign-related variables including five city dummies and campaign year dummies. Overall, the model is significant. Its adjusted R^2 is 71.6%, indicating its greater explanatory power. The coefficient of distance remains negative and significant at 0.1% level. The first hypothesis is confirmed for domestic investors. Investment decisions of domestic investors are negatively affected by geographic distance between ventures and them. In addition, females invest more into ventures seeking equity crowdfunding than their counterparts. The difference is statistically significant at 0.1% level.

In model 4, we further adds the interaction term between the distance variable and the female investor dummy variable. We obtain similar results for the other variables and a significant (at the 1% level) negative coefficient for the interaction term. This provides evidence again that female domestic investors are more distance sensitive. Therefore, the third hypothesis is confirmed for domestic investors. Combining the coefficient of the interaction term with the positive significant coefficient of female investor, we can also see that female domestic investors pledge more than their counterparts; nevertheless, the more distant the ventures involved are located, the smaller the difference becomes.

To address the question whether there exist gender-based homophily in equity crowdfunding, we extend model 4 by incorporating the interaction term between TMT Female and Female Investor. The coefficient is positive and significant at the 5% level, implying that female domestic investors pledge more capital into ventures with female TMT members. Therefore, the fifth hypothesis is confirmed for domestic investors.

Model 6 is the main model. It adds the interaction term between distance and TMT female in the previous model. The coefficient of this interaction term is negative and significant at the 5% level, lending support to the six hypothesis. Investors' distance sensitivity has more sever effect on venture with females in TMT. Therefore, these ventures would have been able to raise more capital through equity crowdfunding if they had been located closer to the investors.

We also conduct regressions on investments from overseas investors. Results are presented in Table 9. We obtain significant positive coefficient for the female investor variable in the baseline model (model 1), which incorporates only investment- and investor-related variables in the regression. However, after adding venture- and campaign-related variables in the regression, the coefficient is not statistically different from zero. For the other

variables of interest, regressions do not offer significant results. As a result, the first, third, fifth, and sixth hypotheses cannot be substantiated for overseas investors.

Table 9: Results of Regressions for the Foreign Investment Sample

	(1) Ln(amount)	(2) Ln(amount)	(3) Ln(amount)	(4) Ln(amount)	(5) Ln(amount)	(6) Ln(amount)
TMT_Female			-0.0288	-0.0281	-0.0278	0.276
			[0.0334]	[0.0335]	[0.0350]	[0.372]
Ln(distance)	-0.0181	-0.0104	-0.0210	-0.0153	-0.0153	-0.0101
	[0.0209]	[0.0226]	[0.0237]	[0.0251]	[0.0251]	[0.0268]
Female	0.0607*	0.478	0.0536	0.358	0.358	0.370
	[0.0345]	[0.379]	[0.0335]	[0.401]	[0.401]	[0.403]
Ln(distance) #Female		-0.0669		-0.0489	-0.0488	-0.0507
		[0.0607]		[0.0641]	[0.0641]	[0.0643]
TMT_Female #Female					-0.00271	0.000264
					[0.0876]	[0.0877]
Ln(distance) #TMT_Female						-0.0490
						[0.0597]
Other Investment Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture Var.	No	No	Yes	Yes	Yes	Yes
Campaign Var.	No	No	Yes	Yes	Yes	Yes
N	7054	7054	7054	7054	7054	7054
Adj. R2	0.700	0.700	0.719	0.719	0.719	0.719
AIC	18103.8	18104.6	17681.6	17683.0	17685.0	17686.4
BIC	18316.5	18324.2	18134.5	18142.7	18151.5	18159.8
F	620.5	600.2	326.2	321.1	316.3	311.6
P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.4 Robustness Checks

We conduct several robustness checks.

First, we notice that some domestic investors gave only vague location information. They provide only the name of the federal state instead of the city they are living in. To take account of this, we create a dummy variable, which, for each investment, takes a value of one if the investor is located in the same state as the venture and zero otherwise. We employ this same state dummy variable as the measure of distance and re-conduct the regressions for domestic investments. Distance sensitivity of domestic investors implies that they pledge more capital in ventures that are located in the same state as they are. Moreover, if female domestic investors are more distance sensitive, they invest a larger amount of capital in venture in the same state than their counterparts do. Besides, ventures with female TMT members receive more capital through equity crowdfunding if they are from the same

state as the investor. Accordingly, we expect to obtain significant positive coefficient for the same state variable as well as for interaction terms between it and the female investor or the TMT female variable. Table 10 presents the regression results. In the baseline model, the coefficient of the same state variable is positive and significant at the 0.1% level. The interaction term between this variable and female investor has a significant positive coefficient in model 2. Adding venture-, campaign-related variables in the baseline model, we obtain similar results in model 3 and substantiate the first hypothesis: Geographic proximity matters in equity crowdfunding. This model is overall significant and has a greater explanatory power with adjusted R^2 71.6%. Extending model 3 by adding the interaction term between same state and female investor, model 4 confirms that female investors are more distance sensitive. The positive significant coefficient of the interaction term between TMT female and female investor in model 5 lends support to the fifth hypothesis, namely to the existence of gender-based homophily in equity crowdfunding. Results of model 6 implies that ventures with female TMT members would benefit more from geographic proximity to investors then their counterparts do. The sixth hypothesis is confirmed with the domestic investment sample.

Table 10: Robustness Check (1) Same State Dummy for the Domestic Investment Sample

	(1) Ln(amount)	(2) Ln(amount)	(3) Ln(amount)	(4) Ln(amount)	(5) Ln(amount)	(6) Ln(amount)
			-0.0240*	-0.0248**	-0.0337**	-0.0424***
TMT_Female			[0.0125]	[0.0125]	[0.0132]	[0.0139]
	0.140****	0.129****	**0.104**** **	0.0933****	0.0936****	0.0832****
Same State	[0.0140]	[0.0148]	[0.0137]	[0.0144]	[0.0144]	[0.0154]
	0.131****	0.116****	0.117****	0.102****	0.0899****	0.0913****
Female	[0.0129]	[0.0144]	[0.0126]	[0.0140]	[0.0153]	[0.0153]
		0.0828***		**0.0799*** **	0.0755**	0.0701**
Same State#Female		[0.0314]		[0.0310]	[0.0310]	[0.0311]
					0.0654 **	0.0597*
TMT_Female#Female					[0.0304]	[0.0306]
Same State #TMT_Female						**0.0610** ** [0.0282]
Other Investment Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture Var.	No	No	Yes	Yes	Yes	Yes
Campaign Var.	No	No	Yes	Yes	Yes	Yes
N	51350	51350	51350	51350	51350	51350
Adj. R2	0.693	0.693	0.716	0.716	0.716	0.716
AIC	134064.5	134060.4	130067.3	130063.1	130060.6	130058.4
BIC	134471.5	134476.1	130783.8	130788.5	130794.9	130801.5
F	3121.9	3056.1	2100.8	2075.9	2051.3	2027.0
P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Second, to take account of potential influence of investments from friends and family members, we exclude for each venture investments made in the first three days of the campaign. That means about 31.83% and 25.46% of investments from domestic investors and overseas investors are excluded from the analyses, respectively. The reduced sample consists of 36615 domestic investments and 5474 foreign investments. We redo the regression analyses for the reduced sample and present results in Table 11.

As shown in Panel A, results with the reduced domestic investment sample are similar to those with the full sample in Table 8, except that the interaction term between distance and TMT female is now significant at 10% level.

Panel B presents results with the reduced foreign investment sample. We do not obtain significant coefficients from model 1 to model 6.

Table 11: Robustness Check (2) Reduced Sample

Panel A: Reduced Domestic Investment Sample

	(1) Ln(amount)	(2) Ln(amount)	(3) Ln(amount)	(4) Ln(amount)	(5) Ln(amount)	(6) Ln(amount)
TMT_Female			-0.00832	-0.00927	-0.0205	0.0680
			[0.0147]	[0.0147]	[0.0156]	[0.0521]
Ln(distance)	-0.0365****	-0.0325****	**-0.0307******	-0.0273****	-0.0275****	-0.0247****
	[0.00493]	[0.00518]	[0.00478]	[0.00502]	[0.00502]	[0.00533]
Female	0.109****	0.258****	0.0955****	0.222****	0.196****	0.185****
	[0.0151]	[0.0553]	[0.0147]	[0.0544]	[0.0555]	[0.0556]
Ln(distance) #Female		-0.0282***		**-0.0238****	-0.0223**	-0.0201**
		[0.0102]		[0.0100]	[0.0100]	[0.0101]
TMT_Female #Female					**0.0800****	0.0755**
					[0.0347]	[0.0348]
Ln(distance) #TMT_Female						**-0.0164***
						[0.00922]
Other Investment Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture Var.	No	No	Yes	Yes	Yes	Yes
Campaign Var.	No	No	Yes	Yes	Yes	Yes
N	36615	36615	36615	36615	36615	36615
Adj. R2	0.684	0.684	0.708	0.708	0.708	0.708
AIC	96001.5	95996.7	93090.7	93087.4	93084.4	93083.5
BIC	96392.9	96396.6	93779.8	93785.0	93790.6	93798.1
F	2062.8	2018.2	1411.6	1394.2	1378.2	1361.9
P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Panel B: Reduced Foreign Investment Sample

	(1) Ln(amount)	(2) Ln(amount)	(3) Ln(amount)	(4) Ln(amount)	(5) Ln(amount)	(6) Ln(amount)
TMT_Female			0.00565	0.00734	0.00337	0.388
			[0.0380]	[0.0381]	[0.0400]	[0.425]
Ln(distance)	-0.0128	-0.000798	**-0.00803**	0.00319	0.00314	0.00975
	[0.0233]	[0.0253]	[0.0264]	[0.0282]	[0.0282]	[0.0299]
Female	0.0747**	0.699*	0.0709*	0.646	0.644	0.657
	[0.0379]	[0.394]	[0.0370]	[0.412]	[0.413]	[0.415]
Ln(distance) #Female		-0.100		**-0.0923**	-0.0930	-0.0951
		[0.0629]		[0.0657]	[0.0659]	[0.0663]
TMT_Female #Female					**0.0320**	0.0349
					[0.0942]	[0.0944]
Ln(distance) #TMT_Female						**-0.0622**
						[0.0683]
Other Investment Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor Var.	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture Var.	No	No	Yes	Yes	Yes	Yes
Campaign Var.	No	No	Yes	Yes	Yes	Yes
N	5474	5474	5474	5474	5474	5474
Adj. R2	0.700	0.700	0.719	0.719	0.719	0.719
AIC	14016.4	14016.2	13690.5	13690.5	13692.4	13693.6
BIC	14221.2	14227.6	14126.6	14133.2	14141.7	14149.6
F	479.7	464.1	257.4	253.4	249.7	246.0
P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Third, we conduct quantile regressions to address whether the effect of distance varies across conditional quantiles of investment amount. We estimates the median, the 25% and the 75% quantiles for domestic investments as well as foreign investments. As shown in Table 12, results for domestic investments are similar to those with the conditional mean model. The interaction term between TMT female and female investor is insignificant at the 25% quantile and 75% quantile. However, the interaction term remains significant at the median. In addition, the significance level of the interaction term between distance and TMT female is reduced. Overall, distance has a larger effect at higher quantile. We also perform Wald tests to investigate whether the coefficient of distance is the same at the different quantiles. Test results show the effect of distance differs significantly at the 10% level from the 25% to the 75% quantile, while it does not vary significantly between the median and the 75% quantile or the 25% quantile. With the foreign investment sample, the conditional median model changes little from the conditional mean model, while the 25% and the 75% quantile models deliver dissimilar results. At the 25% quantile, the interaction term between distance and TMT female is negative and significant, suggesting ventures with female TMT members are more influenced by distance sensitivity of overseas

investors. While at the 75% quantile, female overseas investors invest more into gender diverse ventures, the difference is significant at 10% level. The effect of distance differs significantly at the 0.1% level between the 25% and the 75% quantile and at 5% level between the median and the 75% quantile.

Table 12: Robustness Check (3) Quantile Regressions

	Domestic Investments				Foreign Investments			
	Mean	Median	25% Quantile	75% Quantile	Mean	Median	25% Quantile	75% Quantile
	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)	(6) Ln(amount)
TMT_Female	0.0518	0.1086**	0.0988*	0.0535	0.276	0.2055	0.5484***	-0.2199
	[0.0440]	[0.0502]	[0.0567]	[0.0398]	[0.372]	[0.3018]	[0.2079]	[0.3497]
Ln(distance)	-0.0273****	**-0.0236**** **	**-0.0184**** **	**-0.0313**** **	-0.0101	-0.0227	0.0283	-0.0850****
	[0.00431]	[0.0046]	[0.00519]	[0.00472]	[0.0268]	[0.0296]	[0.0246]	[0.0213]
Female	0.212****	0.3028****	0.2145***	0.2633****	0.370	0.4058	0.3028	0.2431
	[0.0447]	[0.0616]	[0.0687]	[0.0620]	[0.403]	[0.6029]	[0.6634]	[0.2362]
Ln(distance) #Female	-0.0207**	**-0.0274** **	**-0.0307** **	**-0.0229** **	-0.0507	-0.0570	-0.0401	-0.0362
	[0.00819]	[0.0113]	[0.0127]	[0.0108]	[0.0643]	[0.0949]	[0.1052]	[0.0389]
TMT_Female #Female	0.0605**	0.1114**	0.0343	0.0440	0.000264	0.00613	-0.1094	0.1222*
	[0.0305]	[0.0486]	[0.0470]	[0.0325]	[0.0877]	[0.0939]	[0.1008]	[0.0676]
Ln(distance) #TMT_Female	**-0.0159** **	**-0.0296**** **	**-0.0283*** **	**-0.0126* **	**-0.0490**	-0.0408	-0.0978***	0.0287
	[0.00783]	[0.00897]	[0.01008]	[0.00700]	[0.0597]	[0.0488]	[0.0336]	[0.0583]
Other Investment		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Investor		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Venture		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Campaign Var.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	51350	51350	51350	51350	7054	7054	7054	7054
Adj. R2	0.716	0.5033	0.4876	0.5021	0.719	0.5020	0.5124	0.4901

Summarizing results from the robustness checks, we find that regression results based on the overseas investor sample are quite sensitive to the sample size and differ to a certain degree across quantiles. In addition, the first, third, fifth, and sixth hypotheses cannot be confirmed with the foreign investment sample. In contrast, regression results based on the domestic investment sample are robust and provide evidence to the abovementioned four hypotheses. Domestic investors exhibit distance sensitivity. In particular, female domestic investors make decisions in favor of geographically closer ventures. Ventures with at least one female in TMT are more likely to receive capital from female domestic investors. These ventures would also benefit more from geographic proximity to investors.

5 Discussion and Conclusion

Employing investment data from the German platform Companisto, we investigate the preference of local bias among investors in the equity crowdfunding market. Our results suggest that geographic proximity matters to domestic investors' decisions and its effect tends to differ between domestic male and female investors. We find a significant local bias among domestic investors at the investment as well as the investor portfolio level. Moreover, we detect a stronger local bias in investments and portfolios of domestic female investors. We further confirm that ventures with female managing directors would have achieved better funding results had they been located geographically closer to investors. This also applies in the presence of gender-based homophily in equity crowdfunding.

The contribution of our paper is threefold: First, it contributes to the growing literature on equity crowdfunding. The majority of studies on equity crowdfunding focuses on the demand side – ventures launching funding campaigns, for instance success factors of funding campaigns, post-campaign performance, and democratization of access to capital. Fewer studies investigate the supply side – crowd investors. Our paper contributes to the literature through examining investment decisions of crowd investors. It helps better understand the supply of capital and hence the mechanism of equity crowdfunding. Second, our paper sheds light on one behavioral aspect in equity crowdfunding – investors' preference for geographically proximate ventures. It is among the first to document the presence of local bias in equity crowdfunding at individual investment as well as investor portfolio level. Hence, our paper contributes to a better understanding of investor behaviors in online financial markets. Third, our paper provides support for the literature on gender difference in financing. On the supply side, it stresses diverse locality of investments between female and male investors. It also documents the presence of gender homphily. On the demand side, it shows that ventures with female managing director tend to suffer more from local bias of investors.

Our findings also have important policy, managerial, and practical implications. They are of special importance to policy makers and online platforms aiming at improving efficiency of investment and financing and hence fostering a sustainable development of the equity crowdfunding market. They also provide capital-seeking entrepreneurs guidance for raising capital more effectively, especially those who turn to equity crowdfunding as a last resort. When selecting among platforms to launch financing campaign, they should take into consideration the locality of the platforms' investor base. Our results suggest a moderating effect of geographic propinquity on gender homophily. In the presence of gender homophily, ventures with female managing director would have raised more capital had they been geographically closer to investors. This finding provides information particularly relevant for female entrepreneurs.

Our empirical analysis has some limitations. It has to rely on imperfect distance measure: self-report location information. We are aware of the fact that some domestic investors provide vague location information (only the name of the federal state or the country). To account for potential bias this might bring to our results, we exclude observations for which only country name is available. We also employ the *same state* dummy as distance measure and obtain robust results. Nevertheless, data obtained directly from the platform operators might be more accurate in terms of location as well as other sociodemographic attributes. Another limitation of this analysis is the inadequate and unbalanced data about overseas investors (342 females, 2,086 males). Our results with respect to insignificant distance sensitivity and local bias of overseas investors might be attributed to the dataset to a certain degree. With a more balanced dataset consisting of more female overseas investors, we might derive different results. Moreover, the analysis relies on the assumption that investors have chosen Companisto and considered ventures on the platform for their investments. It does not consider campaigns from other platforms. Competitive campaigns on the other platforms might distract investors interest and affect their investment decisions in terms of whether and how much to invest in a certain campaign. Consequently, our results might suffer from this self-selection bias. Future research could consider incorporating more platforms. Further, our analysis considers only one platform Companisto in Germany. Although Companisto is one of the most active and successful platforms in the German equity crowdfunding market and our dataset covers a long period since its foundation, generalization of our findings might still be a problem. For instance, Hornuf, Schmitt, and Stenzhorn (2020) find that portal design tends to influence the degree of investment locality. It would be informative to see how our findings would change if data from other platforms and other countries are incorporated. Furthermore, our study confirms the presence of local biases among German domestic investors. Social ties of entrepreneurs (such as family and friends) is discredited as reason for local bias; however, it does not mean our study rules out the other possibilities, especially local informational advantage or other value-related information about venture quality embedded in location. Hornuf, Schmitt, and Stenzhorn (2020) evidence that location-biased investors tend to underperform their counterparts. Nevertheless, their dataset consists of the precursors of the German equity crowdfunding market and does not cover the latecomers, which sociodemographic and cultural characteristics might differ and hence result in different saving and investment patterns. Future research would be well served by investigating post-funding performance of ventures with recent data to address whether investment locality in the German equity crowdfunding market is information-driven. Last, future research could benefit from applying a survey methodology to investigate root causes of local biases. Especially, it could exploit the possibility of online communication with investors through online portal forum.

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Appendices

Appendix 1: Computation of Investment Local Bias and Investor Portfolio Local Bias

Following Coval and Moskowitz (1999), Cumming and Dai (2010), and Hornuf, Schmitt, and Stenzhorn (2020), we calculate two measures of local bias: local bias of individual investment and local bias of individual investor's portfolio.

To calculate local bias of individual investment, we construct a benchmark portfolio for each investment from investor i in venture j. This benchmark portfolio contains all the ventures available on the platform in the period four weeks before and four weeks after this investment. Ventures are equally weighted in the portfolio. Note that the benchmark portfolio can differ for each of the investment dates in the observation period. If we use d_{ij} to denote the disntance between investor i and venture j, and N to denote the number of ventures available for investment ij, the mean distance of this equally weighted benchmark portfolio can be calculated with the following formula:

$$d_{iM} = \frac{1}{N}\sum_{j=1}^{N} d_{ij}$$

Local bias of investment ij equals:

$$LB_{ij} = \frac{d_{iM} - d_{ij}}{d_{iM}} = 1 - \frac{d_{ij}}{d_{iM}}$$

The local bias therefore runs from minus infinity to plus one. A local bias of zero indicates that the investor invested in a firm that is of a comparable distance to the neutral benchmark portfolio. A positive local bias can be interpreted as a tendency to invest in local firms. A negative local bias indicates that investors prefer firms that are further away.

To calculate the local bias of portfolio of each investor, we identify her first investment on the platform and construct her investment portfolio as including all the investments he made since the first investment until the end of the sample period. So her portfolio value is $PF_i = \sum_{j=1}^{T} Amount_{ij}$ with T denotes the number of her investments on the platform. Value adjusted mean distance of this investor could be calculated as:

$$wd_i = \sum_{j=1}^{T} \frac{Amount_{ij} \times d_{ij}}{PFi}$$

The benchmark portfolio of this investor considers all the N' firms available on the platform during the period four weeks before her first investment decision to the end of the sample period. Ventures again are equally weighted in the portfolio. The benchmark portfolio can differ for each of the 19328 investors in the dataset. Mean Vincenty distance of this benchmark portfolio is the weighted average of distance between the investor and each venture in the portfolio:

$$d'_{iM} = \frac{1}{N'} \sum_{j=1}^{N'} d_{ij}$$

Local bias of investor i is then calculated as:

$$LB_i = \frac{d'_{iM} - wd_i}{d'_{iM}} = 1 - \frac{wd_i}{d'_{iM}}$$

A portfolio local bias of zero shows distance neutrality of the investor. A positive portfolio local bias implies that the investor prefer geographically closer ventures when making investment decisions, and vice versa.

We expect the two local bias measures to be positive for both male and female investors and return greater values for female investors (Hypotheses 2 and 4). To investigate whether mean and median local bias measures significantly differ from zero and positive, we conduct t tests and Wilcoxon signed rank tests, respectively. To examine whether different investor categories (like male versus female, domestic versus overseas) exhibit local bias to different degrees, we further conduct two-sample t tests with unequal variance for mean equality and Wilcoxon rank sum tests for median equality in the presence of skewed local bias data.

Appendix 2: Variables for Regression Analyses

Variable	Definition
Investment-related	
Ln(amount)	Natural logarithm of the amount of capital in each investment
Ln(distance)	Natural logarithm of the Vincenty distance between the investor and the venture
Same state	Dummy variable; 1 if the investment is from an investor living in the same federal state as the venture and 0 otherwise
Female investor	Dummy variable; 1 if the investment is from a female investor and 0 otherwise
Cum.#Investor	Number of investors who have invested into the venture by one day prior to each investment
Cum. Amount%target	Amount of capital accumulated by the venture up to one day prior to each investment decision
#Available ventures	Number of all the ventures available on the platform in the period four weeks before and four weeks after each individual investment
Weekday	Categorical variable; 7 weekdays, value from 0 Sunday to 6 Saturday
Month	Categorical variable; 12 months; value from 1 January to 12 December
Investor-related	
Investor state	Categorical variable; the investor is living in one of the 16 federal states of Germany or in a foreign country; state names in German and sorted alphabetically; value from 1 to 17; foreign investors takes the value of 6
Overseas	Dummy variable; 1 if the investor is living overseas and 0 otherwise
# Ventures invested	Number of ventures individual investor has invested on Companisto over the whole sample period
Total amount	Amount of capital individual investor has invested on Companisto over the whole sample period
Decile_total amount	Categorical variable; investors are classified into ten deciles based on the amount of capital they have invested on Companisto over the whole sample period
Venture-related	
TMT_Female	Dummy variable; 1 if at least one female in TMT (founder and managing directors) and 0 otherwise
TMT_Size	Number of founders and managing directors
TMT_Dr	Dummy variable; 1 if at least one TMT member holds doctoral title and 0 otherwise
TMT_MBA	Dummy variable; 1 if at least one TMT member holds MBA degree and 0 otherwise
Company age	The number of years the venture has developed
Stage_seed/early	Dummy variable; 1 if the venture is classified by Companisto as in seed or early stage and 0 otherwise
Software IT	Dummy variable; 1 if the venture belongs to the software/IT sector and 0 otherwise
GmbH	Dummy variable; 1 if the venture takes the form of GmbH (limited liability company) and 0 otherwise
Financial Reports	Dummy variable; 1 if financial reports are available on Bundesanzeiger for at least one of the two years prior to the campaign and 0 otherwise
Government loan	Dummy variable; 1 if the venture has received government loan before campaign start and 0 otherwise
Award	Dummy variable; 1 if the venture has received awards before campaign start and 0 otherwise
Patent	Dummy variable; 1 if the venture owns patents or has submitted patent applications before campaign start and 0 otherwise
Early CI	Dummy variable; 1 if the venture launches a follow-up campaign and 0 otherwise

Early Investors	Dummy variable; 1 if the venture has received capital from external investors (such as business angels and venture capital companies) before campaign start and 0 otherwise
5BigCities	Categorical variable; whether the venture is located in one of the following five cities: Berlin, Hamburg, Frankfurt am Main, Munich, Cologne; value from 0 to 5
Campaign-related	
Year_Campaign	Year in which the campaign starts
Target_million	Funding target in millions
Share	Share offered to investors through equity crowdfunding campaign, value between 0 and 1
FI_Profit	Dummy variable; 1 if profit participating loan is employed as financing instrument
Co-Financing	Dummy variable; 1 if the campaign is simultaneously co-invested by professional investors and 0 otherwise
Description length_thousand	Number of characters to describe the project in thousands; descriptions under the overview and team tabs; in case the project is described only in German language, google translator is used for translation
No Videos	Number of videos about the project posted on the campaign page

Appendix 3: Changes of Sample Size

Step	#Projects	#Investors	#Investments	Reason
1	104			Of 107 campaigns listed on the platform on May 17, 2019, two are still ongoing on May 17, 2019 ("vanilla bean" and "KoRo2"), one campaign ("WIE MÄNNER ÜBER
2	100			No information about investors in four campaigns. → excluded
3	97	20623	69220	The number of investor names we scraped for three campaigns does not equal the number of investors given by Companisto on the campaign page. → excluded
4	97	20623	64256	2140 and 1412 investors pledge capital twice and three times in a certain project, respectively. All follow-on investments of each investor took place on the same date. → Follow-on investments of each investor are merged into his/her first investment.
5	97	20619	64250	Investment date as "0001-11-30" →
6	97	20378	63133	"gender guesser" results: male / female →
7	97	20332	62871	Companist no location info → excluded
8	97	19328	58404	Company investors and late investments → excluded

Appendix 4: Geographic Distribution of Investments

Domestic Investors				Overseas Investors							
State	Freq.	%	Cum.	Country	Freq.	%	Cum.	Country	Freq.	%	Cum.
Baden-Württemberg	7619	14.84	14.84	AT	2824	43.81	43.81	IT	243	3.77	92.77
Bavaria (Bayern)	8753	17.05	31.88	BE	181	2.81	46.62	LI	10	0.16	92.93
Berlin	5917	11.52	43.41	BG	22	0.34	46.96	LT	1	0.02	92.94
Brandenburg	1212	2.36	45.77	CH	2104	32.64	79.60	LU	98	1.52	94.46
Bremen	376	0.73	46.50	CY	20	0.31	79.91	LV	4	0.06	94.52
Hamburg	2611	5.08	51.58	CZ	68	1.05	80.96	MT	14	0.22	94.74
Hesse (Hessen)	4284	8.34	59.93	DK	17	0.26	81.23	NL	146	2.26	97.01
Mecklenburg-Vorpommern	473	0.92	60.85	EE	35	0.54	81.77	NO	21	0.33	97.33
Lower Saxony (Niedersachsen)	3998	7.79	68.63	ES	144	2.23	84.01	PL	25	0.39	97.72
North Rhine-Westphalia (Nordrhein-Westfalen)	8874	17.28	85.91	FI	8	0.12	84.13	PT	11	0.17	97.89
Rhineland-Palatinate (Rheinland-Pfalz)	1616	3.15	89.06	FR	120	1.86	85.99	RO	23	0.36	98.25
Saarland	359	0.70	89.76	GB	126	1.95	87.95	SE	14	0.22	98.46
Saxony (Sachsen)	2003	3.90	93.66	GR	22	0.34	88.29	SI	28	0.43	98.90
Saxony-Anhalt (Sachsen-Anhalt)	654	1.27	94.93	HR	3	0.05	88.33	SK	71	1.10	100.00
Schleswig-Holstein	1672	3.26	98.19	HU	26	0.40	88.74	Subtotal EFTA and UK	6446		
Thuringia (Thüringen)	929	1.81	100.00	IE	17	0.26	89.00	Other	608		
Total	51350							Total	7054		

Appendix 5: Descriptive Statistics of Continuous Variables (after Winsorizing)

Variable	N	Mean	Median	Std. Dev.	Min.	Max.
Investment Variables						
Amount_thousand_win	58404	482.3492	200	686.3023	10	2500
Ln(amount_win)	58404	5.1210	5.2983	1.6105	2.3026	7.8240
Distance_win	58404	356.4409	383.4546	190.7778	5.3449	681.9697
Ln(distance_win)	58404	5.4985	5.9492	1.2312	1.6761	6.5250
Cum.#Investor_win	58404	369.1578	319	294.5001	0	1028
Cum.Amount%Target_win	58404	0.4369	0.3666	0.3588	0	1.2528
#Available Venture_win	58404	2.9498	3	1.0604	1	5
Venture Variables						
TMT_Size_win	97	2.1959	2	0.9425	1	4
TMT_Female #_win	97	0.1340	0	0.3424	0	1
TMT_Female Ratio_win	97	0.0558	0	0.1482	0	0.5
Company age_win	97	3.5979	2	4.5015	0	18
Campaign Variables						
Target_million_win	97	0.5474	0.4	0.4979	0.1	2.15
Share_win	97	0.1155	0.108	0.0742	0	0.313
Description_thousand_win	97	3.7535	3.607	0.9805	2.509	5.838
No Videos_win	97	1.2680	1	0.5685	1	3
Investor Variable						
# Ventures invested_win	19328	3.2119	1	4.8182	1	43
Total amount_win	19328	1935.463	500	3993.391	40	23850

Appendix 6: Summary Statistics of Investment Local Bias and Investor Local Bias (after Winsorizing)

Local Bias_Investment	N	Mean	Median	Std. Dev.	Min.	Max.
Overall	58404	0.1319****	0.0069****	0.4822	-0.6952	1
Positive	31507	0.4638	0.3561	0.3835	0.0000101	1
Zero	0	0	0	0	0	0
Negative	26897	-0.2569	-0.1944	0.2289	-0.6952	-0.00000444
Local Bias_Investor	N	Mean	Median	Std. Dev.	Min.	Max.
Overall	19328	0.0751****	-0.0076****	0.3660	-0.3636	0.7787
Positive	9354	0.3811	0.2992	0.2839	0.0000934	0.7787
Zero	164	0	0	0	0	0
Negative	9810	-0.2155	-0.2212	0.1152	-0.3636	-0.000120

Appendix 7: Tests for Multicollinearity (after Winsorizing)

(1) Correlation Matrix: Domestic Investors

Domestic Investor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ln(amount)	1														
local bias_investment	0.0012	1													
local bias_investor	-0.0034	0.3549*	1												
ln(distance)	0.0149*	-0.5752*	-0.6273*	1											
# ventures invested	-0.1811*	-0.0420*	-0.1015*	0.0797*	1										
total amount	0.5045*	-0.0367*	-0.0394*	0.0570*	0.3690*	1									
TMT_size	-0.1188*	0.0567*	0.0122*	-0.0330*	-0.0465*	-0.0994*	1								
company age	0.2162*	0.0298*	0.0240*	0.0048	-0.0265*	0.0935*	-0.4244*	1							
Target	0.2727*	0.0092*	-0.0301*	0.0274*	-0.0507*	0.0864*	-0.2137*	0.4152*	1						
Share	-0.0842*	0.0842*	0.0023	-0.0023	-0.0413*	-0.0705*	0.2812*	-0.4512*	-0.1308*	1					
No Videos	-0.0245*	-0.0377*	0.0075	-0.0114*	0.0204*	0.0157*	0.1085*	-0.0182*	0.1801*	-0.1566*	1				
ln(description length)	-0.1976*	0.0497*	0.0492*	-0.0706*	-0.0071	-0.1124*	0.3054*	-0.2095*	-0.2124*	0.1795*	0.1033*	1			
cum.#investor	0.0849*	-0.0695*	-0.0213*	0.0380*	-0.2384*	-0.0709*	0.1088*	0.1387*	0.2890*	0.0925*	0.0625*	0.0192*	1		
cum. AmountTarget	0.0797*	-0.1031*	-0.0145*	0.0311*	-0.2014*	-0.0477*	0.0676*	0.0891*	-0.0882*	-0.0460*	-0.0109*	-0.0106*	0.7493*	1	
#available venture	0.0260*	-0.2965*	-0.0253*	0.0303*	0.0032	0.0290*	-0.1343*	0.0039	0.0251*	-0.1200*	0.0898*	-0.0420*	0.1527*	0.2391*	1
	* p < 0.05														

Appendix 8: Tests for Multicollinearity (after Winsorizing)

(2) Correlation Matrix: Overseas Investors

Overseas Investor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ln(amount)	1														
local bias_investment	0.0190	1													
local bias_investor	0.0473*	0.2373*	1												
ln(distance)	-0.0087	-0.4400*	-0.4396*	1											
# ventures invested	-0.0763*	-0.0139	0.0110	0.0205	1										
total amount	0.5036*	0.0018	0.0675*	-0.0007	0.5435*	1									
TMT_size	-0.0970*	-0.0095	-0.1757*	0.1791*	-0.0571*	-0.0833*	1								
company age	0.1751*	0.0357*	0.1257*	-0.1134*	-0.0232	0.0639*	-0.4378*	1							
Target	0.2462*	0.0174	-0.0511*	0.0948*	-0.0783*	0.0501*	-0.1473*	0.3159*	1						
Share	-0.0576*	0.1579*	-0.0739*	0.0093	-0.0660*	-0.0778*	0.3044*	-0.4853*	-0.0631*	1					
No Videos	0.0170	-0.0641*	0.0164	0.0222	-0.0212	0.0079	0.0883*	-0.0321*	0.2462*	-0.1294*	1				
ln(description length)	-0.1922*	-0.0444*	-0.1872*	0.1640*	-0.0070	-0.1150*	0.3198*	-0.2203*	-0.1650*	0.1739*	0.1175*	1			
cum.#investor	0.0601*	-0.1670*	-0.1285*	0.1167*	-0.2389*	-0.1202*	0.1395*	0.0878*	0.2697*	0.1111*	0.0728*	0.0566*	1		
cum. AmountTarget	0.0637*	-0.1729*	-0.0213	0.0353*	-0.1810*	-0.0815*	0.0533*	0.0884*	-0.1340*	-0.0559*	-0.0351*	0.0027	0.7220*	1	
#available venture	0.0087	-0.4671*	0.0430*	-0.0344*	-0.0199	-0.0015	-0.1229*	-0.0113	-0.0251*	-0.1505*	0.1204*	-0.0624*	0.1412*	0.2476*	1

* $p < 0.05$

Appendix 7: Tests for Multicollinearity (after Winsorizing)

(3) VIF

	Investments from Domestic Investors				Investments from Overseas Investors			
Variable	VIF	$\sqrt{VIF}$	Tolerance	R^2	VIF	$\sqrt{VIF}$	Tolerance	R^2
Ln(distance)	1.01	1.01	0.9853	0.0147	1.10	1.05	0.9089	0.0911
#Ventures invested	1.26	1.12	0.7954	0.2046	1.51	1.23	0.6620	0.3380
Total amount	1.21	1.10	0.8233	0.1767	1.46	1.21	0.6828	0.3172
TMT_size	1.42	1.19	0.7060	0.2940	1.45	1.20	0.6919	0.3081
Company age	1.76	1.33	0.5687	0.4313	1.79	1.34	0.5578	0.4422
Target	1.95	1.40	0.5139	0.4861	1.89	1.38	0.5287	0.4713
Share	1.47	1.21	0.6790	0.3210	1.55	1.25	0.6449	0.3551
No Videos	1.15	1.07	0.8707	0.1293	1.19	1.09	0.8389	0.1611
Ln(description length)	1.19	1.09	0.8425	0.1575	1.22	1.10	0.8208	0.1792
Cum. #Investor	3.74	1.93	0.2672	0.7328	3.44	1.86	0.2903	0.7097
Cum. Amount%target	3.43	1.85	0.2917	0.7083	3.20	1.79	0.3125	0.6875
#Available venture	1.13	1.06	0.8849	0.1151	1.15	1.07	0.8689	0.1311
Mean VIF	1.73				1.75			

Appendix 8: Tests of Local Bias of Individual Investments (after Winsorizing)

Investment from	N	Mean	Median	Std. Dev.	Min.	Max.
Male	52312	0.1257	0.0061	0.4795	-0.6952	1
Female	6092	0.1851	0.0209	0.5020	-0.6952	1
Difference		-0.0594****	-0.0149****			
Overseas	7054	0.0912	0.0033	0.3928	-0.6952	1
Domestic	51350	0.1375	0.0083	0.4930	-0.6952	1
Difference		-0.0463****	-0.0050****			
Domestic male	45947	0.1309	0.0066	0.4902	-0.6952	1
Domestic female	5403	0.1939	0.0290	0.5122	-0.6952	1
Difference		-0.0630****	-0.0224****			
Overseas male	6365	0.0885	0.0035	0.3912	-0.6952	1
Overseas female	689	0.1166	0.0025	0.4066	-0.6952	1
Difference		-0.0281**	0.0010			

Appendix 9: Tests of Local Bias of Investor Portfolios (after Winsorizing)

Investors	N	Mean	Median	Std. Dev.	Min.	Max.
Male	16161	0.0639	-0.0134	0.3557	-0.3636	0.7787
Female	3167	0.1320	0.0263	0.4101	-0.3636	0.7787
Difference		-0.0681****	-0.0398****			
Overseas	2428	-0.0341	-0.0409	0.2383	-0.3636	0.7787
Domestic	16900	0.0907	0	0.3783	-0.3636	0.7787
Difference		-0.1248****	-0.0409****			
Domestic male	14075	0.0784	-0.0028	0.3679	-0.3636	0.7787
Domestic female	2825	0.1520	0.0575	0.4211	-0.3636	0.7787
Difference		-0.0736****	-0.0603****			
Overseas male	2086	-0.0342	-0.0420	0.2366	-0.3636	0.7787
Overseas female	342	-0.0336	-0.0309	0.2488	-0.3636	0.7787
Difference		0.000587	-0.0085			