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***Birds of a feather flock together and get money  
from the crowd***

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# *Birds of a feather flock together and get money from the crowd*

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## **Abstract**

In constructing online alternative finance instruments as a new form of financial democratization and financial inclusion, this article aims at verifying the presence of similarity effect in equity crowdfunding investments. Discussion focuses on ethnic and gender similarity between the seekers and investors that sustained the project. Our analysis is based on 5,996 personal investors that have participated in 81 equity crowdfunding campaigns, on Crowdcube, a British equity crowdfunding platform from 2011 and 2016.

Results show that in equity crowdfunding gender and ethnic similarities play different role based on investors' characteristics - gender, ethnicity and the combination of two. In particular, ethnic similarity positively influence the level of amount invested by both female and male investors belonging to an ethnic minority. Even if female investors tend to prefer male company, their preference changes if a female proponent belonging to an ethnic minority runs the company.

From a practical perspective, our findings shed new light on how individual characteristics can be important factor in financing situations. Results allow entrepreneurs and equity crowdfunding platforms to understand better potential investor behaviour and highlights the role of equity crowdfunding as tool for minorities' financial inclusion and women entrepreneur empowerment.

**Keywords:** equity crowdfunding, entrepreneurial finance, ethnicity, gender, similarity effect

**JEL classifications:** G02 G11 G41 M13

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## **1 Introduction**

Equity crowdfunding has been a rapidly growing financial instrument since 2012 when the financial crisis have worsened the problem of fundraising for small and medium size enterprises (SMEs) and innovative firms creating room for the development of new financial tools and intermediaries.

Compared to other forms of crowdfunding - donation-based, lending based and reward-based - equity crowdfunding is still in its infancy but due to the rapid growth of the market, regulators and policy makers from different countries are paying a great attention on this relatively new phenomenon. Thanks to the web context in which crowdfunding is developed, crowdfunding is expected to democratize funding by increasing the availability of capital to traditionally underrepresented groups and by enabling entrepreneurs to enlarge their appeal for investments (Barasinska and Schäfer, 2014).

Currently, studies on equity crowdfunding especially focus on the characteristics of the seekers side detecting which drivers influence campaign success (Ahlers et al., 2015; Lukkarinen et al., 2016; Vismara 2016a; Vismara, 2016b). From the supply side, much of the prior scholarly research about investors concentrated effort in ascertaining motivation to participate in crowdfunding campaign (Gerber et al., 2012). In reward and donation based platforms, in particular, investors are driven to fund projects by intrinsic motives, such as social reputation, shared identity, or other non-pecuniary benefits, whereas those on equity-based platforms are driven predominantly by extrinsic – financial - motivation (Schwienbacher and Larralde, 2010; Ordanini et al., 2011; Cholakova and Clarysse, 2015 ) or a combination of both extrinsic and intrinsic drivers (Collins and Pierrakis, 2012). Little is known about investor characteristics, from company and platform perspectives, a better understanding of them reduces the ex-ante search costs and facilitates the ex-post matching (Polzin et al., 2018). For this reason, the need arises of conducting research on the behaviour and individual characteristics of equity crowdfunding investors.

As for investor individual characteristics few studies have addressed gender issues in crowdfunding. In a broad sense, from seekers side, women are less likely than men to engage in new ventures but from the supply side is important to understand if also in crowdfunding market a gender gap persists (Leitch et al., 2018). Compared to reward based crowdfunding where Marom et al. (2014) find that 44% of investors on Kickstarter are female, in investment based crowdfunding, equity and real estate, Hervé et al. (2016) show that 93% of equity crowdfunders are men, so crowdfunding investment market is not different from other

financial markets like business angels and VC that are predominantly male-dominated (Brush et al., 2004, Harrison and Mason, 2007).

Even if the equity crowd and entrepreneurs are mainly male, female entrepreneurs are more likely to succeed at crowdfunding campaigns thanks to the support of other female backers (Greenberg and Mollick, 2015; Horvat and Papamarkou, 2017). In reward-based and equity-based models Greenberg and Mollick (2015) and Vismara (2016c) refer to homophily theory and their researches show that there is a strong correlation between female gender of the entrepreneur and backers' profile.

Also ethnic profile is one of the elements that may improve similarity effect and it may be crucial in generating trust and overcoming information asymmetry between investors and proponents. To the best of our knowledge, there are no studies that try to combine gender and ethnic similarity in attracting investors on equity crowdfunding platforms. Our research aims to verify if the similarity effect increases the amount invested in the campaign by the single investor and different investor's characteristics, also highlighting the relative role of similarity respect company and entrepreneur characteristics. Toward this end, we collected shareholders information for 81 equity crowdfunding campaigns posted on Crowdcube, a British Platform, from 2011 to 2016.

We collected firms information about the campaign from the Crowdcube website while shareholders information - name and amount invested - from documents filling hosted on Companies House website (*companieshouse.gov.uk*). We identify investors' gender we use the *genderize.io* tool while ethnic origin by surname geographic distribution detached through *forebears.io*, a genealogical source.

Our data show that in equity crowdfunding gender and ethnic similarities play different roles on the basis of investors characteristics - gender, ethnicity and the combination of two. In particular, ethnic similarity positively influences the level of amount invested by both female and male investors belonging to an ethnic minority. Even if female investors tend to prefer male companies, their preference changes if the company is run by a female proponent belonging to an ethnic minority. Among the aspects that influence the variability of the total amount invested, entrepreneur profile and company aspects are the most effective dimensions; nonetheless, also gender and ethnic similarity play a role in determining the total amount invested.

Crowdfunding is an unbounding market thanks to the web context in which it is developed that allows entrepreneurs to enlarge their potential funding supply side. Our study offers

relevant contribution especially for ethnic minority entrepreneurs and equity crowdfunding platforms to better understand potential investor behaviour and highlights the role of equity crowdfunding as tool for financial inclusion.

The paper is organised as follows. Section 2 reviews the relevant literature and presents the research questions. Section 3 presents data, variables and summary statistics used in the empirical section. Section 4 presents and discusses the results of the similarity effect on the amount invested by the single investors, with a study of their concurring role in its determination. Section 5 is the robustness section where we control if the seriality of the investor influence the result obtained. Finally, Section 6 concludes and discusses some implications and future development of this study.

## **2 “Similarity effect” in the investment process**

For “similarity effect” we refer to the tendency of the members of a group to display a preference for associating with other members of the same group. This tendency is often described as “birds of a feather flock together”. This pure preference-based mechanism highlights the role of personal similarity breeding connection and is a basic organizing principle presents across a wide range of social interaction contexts (McPherson et al., 2001).

In financial literature, similarity effect is justified, among others, by arguments concerning: soft information, trust, and personal social network (Ruef et al., 2003; Hegde and Tumlinson, 2014; Bengtsson and Hsu, 2015; Hochberg et al. 2015). More generally in entrepreneurial finance, personal characteristics shared by seeker and investor reduces the cost of found and facilitates collaborations (Gompers et al., 2016; Alsos and Ljunggren, 2017). The influence of similarity biases is also important for understanding how venture capitalists decide whether to invest in specific companies. Several studies (Franke et al., 2006; Bruns et al., 2008; Murnieks et al., 2011) conclude that they tend to look more favourably at teams that have professional experience, human capital, ways of thinking similar to themselves.

Lazarsfeld and Merton (1954) distinguished two types of homophily: status homophily, in which similarity is based on informal, formal, or ascribed status, and value homophily, which is based on values, attitudes, and beliefs. Status homophily includes principal sociodemographic dimensions like race, ethnicity, sex, or age, and acquired characteristics like religion, education, occupation, or behaviour pattern.

Research in crowdfunding field focus especially on status homophily considering investors’ gender. In reward-based projects and in peer-to-peer lending, women are more likely to

successful raise capital than male founders: female-led projects achieve a greater average pledge amount than male-led projects especially in sector whom they are historically underrepresented, as in the case for example of technological projects (Greenberg and Mollick, 2015). Female capital providers prefer to back projects founded by women due to choice homophily between female backers and entrepreneurs (Barasinska and Schäfer, 2014; Beier and Wagner, 2016; Marom et al., 2014) This result is confirmed also in case of equity crowdfunding campaigns. Vismara (2016c), analysing 58 equity offerings of UK crowdfunding platform Seedrs and comparing campaigns launched by firms with a female CEO with those launched by a male CEO, shows that on average, women invest 34 percent more than males. Therefore, the percentage of firms with a female CEO is higher in successful campaigns while the number of male investors is slightly higher in campaigns launched by male-led firms concluding that female investors strongly prefer firms led by females. Also Horvat and Papamarkou (2017) in their study on two UK equity crowdfunding platforms confirm on one hand that female-led campaigns enjoy higher success rate but on the other hand, they find that campaigns with higher participation rate from female investors tend to fail more at raising the target amount.

Within status homophily dimensions also ethnicity plays an important role. Members representing districts with significant immigrant and ethnic minority populations are more likely to support their minority colleagues emphasizing solidarity within ethnicities (Aldrich and Waldinger, 1990; Ruef et al., 2003). Ethnic solidarity theorists focus on social dynamics that facilitates the mobilization of ethnic resources for economic advancement in explaining why some immigrant-minority groups achieve economic success despite societal hostility and initial disadvantages. Thanks to ethnic solidarity, the economic resources support the enclave economy that is composed of businesses lead by immigrant groups which are concentrated in a distinct spatial location and that serve their own ethnic market and/or the general population (Portes and Manning, 1986; Portes and Jensen, 1989).

In VC selection process, a shared ethnicity between founder and VC increases the probability of an investment match and it has a high predictive power for early-stage investments (Hegde and Tumlinson, 2014; Bengtsson and Hsu, 2015) but it also influence the preference to collaborate with other venture capitalists (Gompers et al, 2016). Thanks to web context, crowdfunding can enlarge and facilitate the access to the pool of individuals with a similar ethnic characteristic. The similarity effect tend to get stronger as more types of relationships exist between two people, indicating that homophily on each type of relation cumulates to generate greater homophily (McPherson et al., 2001).

In the framework of the above literature review, we develop three principal research questions:

*Rq1: To what extent gender and ethnic similarity affect the amount invested in the campaign?*

*Rq2: Does the similarity effect change for different investors' gender and ethnic origin?*

*Rq3: Which is the relative importance of similarity effect on the variability of the amount invested in the campaign?*

### **3 Data and methods**

#### *3.1 Sample*

We collected data from Crowdcube, the largest crowdfunding platform in Britain (Beauhurst, 2017). Kaartemo, (2017) shows that that Crowdcube is relatively little researched in crowdfunding performance studies - mostly researchers have focused on Kickstarter that is a reward-based crowdfunding platform. Our sample includes the shareholder investors in 81 equity crowdfunding campaigns posted on Crowdcube from October 2011 to the end of October 2016. These campaigns were successfully concluded, closed, and all investments collected. We restrict our attention to these campaigns since these were the ones that enable us to find out the number of shareholders and the individual amount invested in a consistent manner.

We collected firm information about the campaign from the Crowdcube website. We were able to extract the name of investors and the number of shares subscribed by comparing information of the full list of shareholders from the model Annual Return, filled in accordance with Section 854 of the Companies Act 2006, at the date immediately before and immediately after the date of the campaign. The module AR101 is hosted in Companies House website. The price of the shares, when not disclosed directly in AR101 module, were obtained by dividing the amount collected during the equity crowdfunding campaign by the total number of shares subscribed by the investors during the campaign. The final sample includes 8,600 investments made by 5,996 unique personal investors. The dataset covers a timeframe of six years, from 2011 to 2016. Our sample is a broad cross-section of companies, industries and ages at the time of the equity crowdfunding campaigns (Table 1).

The average amount raised in our sample is £223,153, with a maximum of £1,9m and a minimum of £12,000. The average number of investors per campaign is equal to 106, the most crowded campaign involves 394 investors.

[INSERT TABLE 1 ABOUT HERE]

### *3.2 Gender and ethnicity*

#### *Gender*

Filled documents do not publish the gender of shareholders so to infer it we rely on automated methods. In our study we refer to *genderize.io tool* by comparing first names with a database including 86,710 distinct names across 81 languages (Greenberg and Mollick, 2015; Mohammadi and Shafi, 2017). The level of accuracy of this tool is 82%, the highest rate in the landscape of automated name-based gender detection methods widely used in scientific research (Karimi et al., 2016). Our final dataset includes 1,361 female users and 4,635 unique male investors. Also in the case of equity crowdfunding campaigns (Vismara, 2016c; Hervé et al., 2017) women investors are underrepresented; similar results hold also for venture and angel capital investments (Brush et al., 2004; Harrison and Mason, 2007).

In terms of gender of the entrepreneur, 18 out of 81 campaigns are led by at least one female proponent, and finally 63 are companies in which the single or all the proponents are male. Co-gender cases, cases for which the gender of backers and proponents matches, (Table 3) count for nearly the 68% of the recurrences. In the 1,946 investments made in female-companies, 21.8% of them (425) are associated to female investors. In the 6,654 investments made in male-companies, 82.3% of them (5,476) are associated to male investors.

The average amount invested by female investors is lower than amount provided by male investors: 1,766£ vs 2,179£, male investors invest on average 19% more than female investors. The same conclusion can be drawn by analysing the median amount invested (200£ vs 263£). These figures are opposite from the average bid reported by Vismara (2016c) from Seedrs where female investors invest on average 34% more than man.

#### *Ethnicity*

When ethnicity refers to a group, it implies that members have some awareness of group membership and a common national background and culture (Yinger, 1985). If ethnicity is linked to business founding, it represents a set of connections and social structure among members of an ethnic group that are attached to one another and the ways in which those social structures are used (Aldrich and Waldinger, 1990).

A number of different methodologies have been used to identify the ethnicity of the founder, from direct survey (Ruef et al., 2003; Wadwha et al., 2007; Hart and Acs, 2011), to post-secondary educations in their biographies (Kenney and Patton, 2015) to its inference from individual names (Hegde and Tumlinson, 2014; Bengtsson and Hsu, 2015). For identifying



investors' ethnicity, we refer to this last methodology looking for individual's surname on *forebears.io tool*, a genealogical sources, which includes information on surname geographic distribution. Regarding the entrepreneur, we use information conveyed by the platform and visible to the investors at the time of equity crowdfunding campaign. There are two principal drawbacks in our study. On the one hand, we have only the proponent information rather than all team at the time of the firm's founding, and thus the team question cannot be addressed directly. On the other hand, we cannot control for homonymy recurrences since we measure ethnicity coarsely, via surnames of individuals.

Individual investors' ethnicity is represented into 9 groups as follows<sup>2</sup>: African, Anglo-Saxon, Arabic, Asian, Oriental Bloc, European, Israelian, Southern Africa, Latin American. The same groups are used to identify proponents' ethnicity. Studies highlight that applicants from certain ethnic minority communities appear to experience greater problems than others in accessing external finance, bank loans at start-up and to have a higher propensity to turn to non-bank formal sources of start-up finance (Ram et al., 2002; Smallbone et al., 2003; Clark and Drinkwater, 2010). To understand the potential of availability of capital to traditionally underrepresented groups we focus our study on two main investor groups: the dominant group, investors that belong mainly to British and European origin ethnic groups (Anglo-Saxon, European, Oriental Block, Southern African ,Israelian) and the minority group, investors that belong to those that are considered underrepresented ethnic groups in the British and European financial market (Asian, African, Latin American, Arabic). The frequency for macro-ethnicity can be detached by analysing Table 2.

[INSERT TABLE 2 ABOUT HERE]

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<sup>2</sup> Africa (Angola, Benin, Burkina Faso, Cameroon, Congo, Ethiopia, Ghana, Ivory Coast, Kenya, Madagascar, Malawi, Mauritania, Mauritius, Mozambique, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe), Anglo-Saxon (Australia, Canada, England, Ireland, Malta, New Zealand and Unites States), Arabic (Algeria, Egypt, Iran, Iraq, Lebanon, Libya, Morocco, Oman, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey and United Arab Emirates), Asian (Bangladesh, Cambodia, China, India, Indonesia, Japan, Malaysia, Mongolia, Myanmar, Nepal, North Korea, Philippines, Singapore, South Korea, Sri Lanka, Thailand and Vietnam), Eastern Bloc (Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Ukraine and Uzbekistan), Europe (Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece. Italy, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland), Israel (Israel and Jordan), South Africa (South Africa and Swaziland), Latin America and Caribbean (Argentina, Barbados, Brazil, Chile, Colombia, Dominican Republic, Guatemala, Guyana, Haiti, Jamaica, Mexico, Paraguay, Peru, Trinidad and Tobago and Venezuela).

In terms of ethnicity, most investors are of Anglo-Saxon origins (69.8%), followed by Asian (9.4%) and European (8.1%) ones. African, Latin American, Oriental, Southern African and Israelian together are 10% of the sample. Co-ethnicity cases, cases for which the macro-ethnicity of backers and proponents are the same, (Table 3) count for nearly the 70% of the recurrences. Cases in which there is bot co-ethnicity and co-gender are 40% of the recurrences and where there is none of the two are 14% of the recurrences.

[INSERT TABLE 3 ABOUT HERE]

These results are consistent with Vismara (2016c), which bases his analysis on Seeders, another English platform, and shows that most investors are based in the UK (82.8%) but the distribution of investors in other countries is different from what one would expect in entrepreneurial finance, so from a geographical standpoint, equity crowdfunding allow company to deliver investment opportunities to a diversified set of investors.

### *3.3 Variable description*

There are several observed characteristics that enable us to evaluate the investment likelihood by gender and ethnicity after having controlled for company, campaign, entrepreneur characteristics and investor characteristics.

In our analysis, we focus on the determinants of the amount invested by the crowd considering as dependent variables the logarithm of the amount invested by each investors in the equity crowdfunding campaign.

#### *Independent variables*

In the covariate group we consider three variables that explicit study the similarity between backers and proponents. In particular, gender similarity effect is proxied by the variable **Gender Similarity** which is a dummy variable equals 1 in case of gender similarity between backers and proponents. Ethnic similarity effect is proxied by the variable **Ethnic Similarity** which is a dummy variable equals 1 when backers and proponents share the same ethnicity. We also insert the interaction between ethnic and gender similarity - **Gender & Ethnic similarity** - is a dummy variable equals 1 in case of both gender and ethnic similarity between backers and proponents.

Variables related to the **entrepreneur** profile principally deal with their gender and ethnicity characteristics. **At least one female proponent** is a dummy variable equals 1 in case of at least one female proponents among the overall numbers of proponents and zero otherwise. The ethnic profile is captured by the variable **At least one ethnic minority proponent** is a dummy variable equals 1 in case of at least one ethnic minority proponent in the company and zero for dominant ones.

#### *Control variables*

There are several variables that might influence the investment decisions of investors, for which we have to control for. Some of them refer to company features, other to campaign structure and finally to investor characteristics.

**Company features** are insert in terms of **firm age** - the numbers of years from the firm's establishment to the date of the campaign. On average, the firm in the sample are 2.3 years old. The sector of activity captured by the variable **Innovative** – dummy variable equals one in case of companies active in highly innovative sectors isolated, as in Nesta (2009), on the basis of SIC code<sup>3</sup>; 18 companies (22.2%) in our sample belongs to highly innovative sectors. Finally, we insert the variable **Team size** computed as the log of number of people listed on the Crowdcube site to make up the group of executive around the entrepreneur. Smaller team may be riskier since they might be more recent and a higher number of board members is related to the number of investors and the funding amount reached during the campaign (Ahlers et al., 2015, Horvat and Papamarkou, 2017). In our sample the average team is formed by 3.2 people.

**Campaign structure** is proxied by the following variables. **Equity offering** the percentage of equity offered during the campaign. Equity offering can be considered as a proxy of firm risk for several reasons. On the one hand, signalling theory (Leland and Pyle, 1977) indicates the manager choice of raising equity as a negative signal for the investors since firms opportunistically choose to raise equity when managers know that their shares are overvalued.

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<sup>3</sup>64.20; 72.20; 72.30; Telecommunication, Computer Programming and Software Service Industries; 72.40; 72.60; 73.10; Data Processing, Misc. Computer Services, R&D in Natural Sciences and Engineering; 30.01; 30.02; 32.20; 32.30; Office Equipment; Computers and other Information Processing Equipment; Television and Radio Transmitters and Apparatus for Line Telephony and Line Telegraphy; Television and Radio Receivers, Sound or Video Recording and Reproducing Apparatus; 33.20; 33.30; 33.40 Electronic Instruments and Appliances for Measuring, Checking (except Industrial Process Control); Electronic Industrial Process Control Equipment; Optical Instruments; Photographic Equipment; 24.41; 24.42; 33.10 Pharmaceutical Products and Preparations; Medical and Life Sciences Surgical Equipment and Orthopaedic Appliances; 24.16; 24.17; 31.10; Plastics and Synthetic Rubber in Primary Form; Electric Manufacturing; 31.20; 32.10; 35.30. Motors, Generators and Transformers; Electricity Distribution and Control Apparatus; Electronic Valves, Tubes and other Components; Aircraft and Spacecraft Manufacturing. (Nesta, 2009).

Likewise, an owner’s decision to offer a lower amount of equity can indicate less adverse selection risk in that a bad outcome is less likely to be perceived by owners (Ahlers et al. 2015). Furthermore, greater equity offerings can dilute entrepreneurs’ incentive to commit to their firms. Altogether, more equity offering suggests that a firm is riskier (Mohammadi and Shafi, 2017). On average, firms in our sample offers nearly 18% of equity; more or less the same (18.6%) in terms of investments. **Exit** is a dummy variable equals 1 if the exit strategy is explicit in the campaign and zero otherwise. A planned exit strategy influences the success of the campaign, receiving a return on the money it is typically only attained through an exit or liquidity event, so the presence of an exit strategy could make a campaign more attractive (Ahlers et al., 2015). In our sample, 65 campaigns (more than 80% of the total) envisage at least one exit option.

Finally, we control for the presence of serial investors in the sample and introducing the variable **Serial investor** that is a dummy variable equal to 1 for investors that have participated in more than one campaign and zero otherwise. The group of serial investors is 29% of the investors in the sample and the amount invested by serial investors is on average 794£.

[INSERT TABLE 4 ABOUT HERE]

#### 4. Similarity effect and investment size

We use Ordinary Least Square (OLS) regression to evaluate if similarity patterns, both in terms of gender and ethnicity, increases the individual investor investment size (Table 5). The dependent variable is the log of amount invested by the individual investor in a single campaign for the overall sample (Mod. 1). We also test whether similarity effect are etherogeneous by gender and ethnic groups of the investors. We show estimates for the sub-sample of female/male investors (Mod. 2/3), for the sub-sample of Dominant/Minority ethnic group investors (Mod. 4/5). Finally for the combination of gender and ethnic group of the investors: female investors that come from a dominant/minority ethnic group (Mod. 6/7), male investors that come from a dominant/minority ethnic group (Mod. 8/9).

$$\text{Amount invested} = \alpha + \beta_1 X + \beta_2 \text{Controls} + \varepsilon \quad [2]$$

[INSERT TABLE 5 ABOUT HERE]

For the full sample, estimation results show that gender and ethnic similarity individually have no significant effect on the amount invested, whereas we find that the coexistence of gender and ethnic similarity determines a 30% increase of the amount invested. Moreover, results highlight that the amount invested decreases of 40% when the campaign has at least one female proponent and conversely, the amount invested raises 41% when the campaign has a proponent belonging at one ethnic minority group.

The amount invested in equity crowdfunding campaigns (Model 1) is higher in older company with a larger number of members in the team. Concerning the variables related to the campaigns, those that receive a larger invested amount state a presence of an exit strategy. The percentage of equity offered in the campaign is not significant. Thus, the level of amount invested do not change by campaign and company characteristics but there are differences when we consider investors' and entrepreneurs' characteristics.

Serial investors confirm descriptive statistics that show a lower amount invested and high frequency of the investment regardless gender and ethnic origin of the investors considered. This investment behavior seem to be similar to a gambling strategy.

For female investors (Model 2), gender similarity negatively affects the amount invested otherwise for male investors there is a positive effect (Model 3). In other words, it seems that male investors look at gender similarity is in incentive to invest a higher amount of money while the opposite holds for female investors. This result appears to be consistent with literature that suggest that women in male-dominated fields prefer to support members of the dominant group (Greenberg and Mollick, 2015). Also in the business angel market, research has demonstrated the tendency for women angels to refuse financing to women entrepreneurs, although they are more likely to seek funding from other women (Becker-Blease and Sohl 2007). In case of male investors the interaction fosters the amount invested. Focusing to the comparison between female and male investors, it seems that there are no straight differences in the types of companies and campaigns characteristics that condition the size of investments (Models 2 and 3). The size of their investments increases in older companies, with larger team and when an exit strategy is considered.

Similarly to the comparison by gender, results show different effects when we distinguish investors belonging to different ethnic groups (Models 4 and 5) and when we match both gender and ethnic group of investors (Models 6, 7, 8 and 9). In particular, ethnic similarity have a negative effect on the amount invested by investors belonging to a dominant ethnic group while they have a positive effect on ethnic minorities. For investors that belong to an ethnic minority (Model 5) the presence of an ethnic similarity with the proponent seems to

compensate other aspects of the campaign, for example: the team dimension and the absence of an exit strategy.

Comparing female investors by their ethnicity group (Model 6 and 7) we find that both of them tend to invest significantly less when there is a female proponent but the overall similarity effect is over turned for female investors belonging to an ethnic minority group. In models 8 and 9, male investors that belong to the dominant ethnic group there is a negative and significant effect on the amount invested in company run by an entrepreneur of the same origin. For male minority, ethnic and gender similarity have a strong and positive effect on the amount invested but the overall similarity effect is reduced when this similarity appears together. This can be linked to the fact that for male minority investors the amount invested is lower in companies that are active in innovative sector and the most part of ethnic minority companies are innovative businesses.

Results showed by heterogeneous effects indicate different trends for similarity effect and they depend on investors' characteristics.

About *Rq1*, it seems that similarity effect influence the amount invested by the individual investor and its result change according to investors gender and ethnic origin (*Rq2*). Nonetheless, the different covariates introduced, being heterogeneous, as confirmed by the variables' descriptions, do not share a common unit of measure. This implies that their relative contribution can be observed uniquely in terms of their relevance, in a multivariate frame, to explaining a given object of analysis.

To better point out their concurring role in the definition of the investment size, we investigate the importance and the relative contribution of different aspects that characterized an equity crowdfunding investment, for explaining the quantity of amount invested by the single investor. The characteristics identified can be associated to company, entrepreneur, campaign, investor and degree of similarity in terms of gender and ethnicity. Coherently, we model in equation (2) the relationship between the identified characteristics and the amount invested (in log).

In the general equation (2) we follow a Shapley decomposition method (Shapley, 1953) that, since its introduction in game theory, permits distributing a goodness-of-fit measure of an econometric model among regressors. As a goodness-of-fit measure, we adopt the total R<sup>2</sup>-value obtained from the OLS pooled estimations of equation (2). Since some attributes are formed by groups of variables, we use a generalization of the Shapley value, the Owen value (Owen, 1977), which allows decomposition in the case of exogenously grouped regressors, as

suggested by Shorrocks (2013). Results of the Shapley and Owen value decomposition are reported in Table 6.

[INSERT TABLE 6 ABOUT HERE]

As expected, being a serial investor has an important role in explaining the existing heterogeneity in the amount invested in the campaign and this is particular true for male investors both belonging to dominant or minority ethnic group (Table 6).

Results underline the pivotal role that company characteristics have on the amount invested, a role nearly exclusively related to company's age and structure of the team. Turning to the remaining characteristics, the overall R2 of the full sample can be explained mainly by two groups of characteristics: entrepreneur profile, linked to the presence of at least one female entrepreneur in the company, and the combination of gender and ethnic similarities between backers and proponents that condition the variability of the amount invested in an unneglectable manner ( $Rq3$ ). Conversely, campaign features appears to be the weakest characteristics in terms of explanatory power with respect to the size of the investment.

As in the previous analysis, we disaggregate our sample by investor gender and ethnic origin (Table 7). Female and male investors look at different aspects in the campaign. Even if company characteristics still remain the most important aspect that influence the variability of the amount invested, female investors give more importance to the size of the team whereas male investors tend to increase the investment size in older companies. The similarity group represents a main aspect for all investor categories in particular for female investors for which in case of minority ethnic profile contributes for nearly 22% to the formation of the overall R2. For male that belong to an ethnic minority, gender similarity assumes the same importance of company age. The seriality profile strongly conditions the variability of the amount invested for male investors belonging to dominant ethnic group. This characteristic explains more the 55% of the variance of the amount invested.

[INSERT TABLE 7 ABOUT HERE]

## **5. Robustness**

Given the importance of the serial investors, we decide to verify if the investment behavior adopted by this kind of investors influence the overall previous results.

Table 8 and Table 9 present the results of our estimations without considering serial investors in the sample. Our main findings remain qualitatively unchanged and the stability of the coefficients in the model estimation confirm the robustness of our results.

[INSERT TABLE 8 AND 9 ABOUT HERE]

## **6. Conclusion**

This study explores the presence of ethnic and gender similarities between backers and proponents in equity crowdfunding investment investigating the relationship between similarity patterns and the size of investment. Our results show that similarity, in terms of both gender and ethnic matching between investors and proponent, is an important aspect in the investment decision but its effects change for the different investors' characteristics. In particular, differently from reward based crowdfunding, female investors are less present in equity crowdfunding market and the size of female investment is lower than those of male ones. Female investors show a clear preference for male lead campaigns whereas male investors tend to support more male company; nevertheless in case of female entrepreneur belong to an ethnic minority receive the support of female investors sharing the same ethnic origin of the proponent.

We find that equity crowdfunding appears to reduce constraints for founders that belong to an ethnic minority seeking capital, both for female and male investors the level of engagement in the campaign is higher if they share the same ethnic minority profile of the proponent. An ethnic match especially for ethnic minority group compensates other campaigns' aspects, for example the number of people in the company's team and the presence of an exit strategy. The combination of gender and ethnic similarities between backers and proponents conditions the variability of the amount invested in an unneglectable manner whereas campaigns' characteristics appear to be not relevant.

There are several advantages of this setting for studying the impact of gender and ethnic similarities in investment decisions. First, unlike much of the past work on this topic that mainly rests on gender profile, our results regarding ethnic similarity represents a novel in this field. Second, studying similarity effect in crowdfunding setting, contributes to a better understanding of the persistence of this phenomenon also in the web context and in online financing relationships.

Finally, we contribute to the nascent literature in equity crowdfunding and financial inclusion related fields. Financial inclusion in fact, is defined as a state in which individuals or firms



have effective access to financial products and services appropriate to their needs (Demirgüç-Kunt et al., 2015). Equity crowdfunding appears to be a tool for a sustainable financial inclusion of ethnic minorities in the financial system, both from seekers and suppliers of capital. From seekers side, our study allows women and ethnic minority entrepreneurs to identify investors' behaviours and characteristics that maximize fund raising opportunities through equity crowdfunding campaigns. From suppliers side we provide a snapshot of how women and ethnic minority perceive and invest in equity crowdfunding projects adopting a longitudinal perspective and contributing to theory building. For equity crowdfunding literature we show that the Investment decision in equity crowdfunding are driven not only by financial motivations but also by a similarity matching between proponent and investors. And this is particular true for female investors belonging to an ethnic minority group.

From a practical perspective, the results are relevant not only for female and ethnic minority but for all entrepreneurs, investors, and crowdfunding platforms alike, as understanding crowd composition and investment dynamics are in the interest of each group. Such knowledge may have a positive impact on the probability of campaign success, which especially for equity model, studies show different results (Lukkarinen et al, 2016).

Due to a different result compared with reward based platform (Greenberg and Mollick, 2015) future researches could extend analysis to other platforms or compare different crowdfunding model (i.e.: reward based vs equity based) to understand: why in riskier situation female investors prefer male business? Or, do female investors prefer to support female companies only in a low risk context? In particular, about the emotional part of equity crowdfunding campaign, female and male investors may have different investment behaviour with words and language used to present the project. Do ethnic minority and female entrepreneurs adopt specific words for promoting the crowdfunding campaign? We hope that future works could go in- depth to these issues.

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**Table 1 - Descriptive statistics**

<b>Panel A: Sample overview</b>		<b>Obs</b>					
Number of companies (ECF campaigns)		81					
Number of investments made by personal investors		8,600					
Number of investments made by female investors		1,603					
Number of investments made by male investors		6,997					
Number of unique female investors		1,361					
Number of unique male investors		4,635					
Number of investments made by ethnic minority investors		1,568					
Number of investments made by ethnic dominant investors		7,032					
Number of investments made by a serial investors		2,526					
Number of unique ethnic minority investors		1,064					
Number of unique ethnic dominant investors		4,932					
<b>Panel B: Summary statistics of key variables for companies</b>		<b>Obs</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>sd</b>
Company age at the date of ECF (in years)		81	2.3	0.0	2.0	11.0	2.3
Company sector Innovative (1=yes; 0= no)		81	0.22				0.42
Team size (number)		81	3.20	0.0	3	12	3.18
<b>Panel C: Summary statistics of key variables for campaigns</b>		<b>Obs</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>sd</b>
Total amount raised (£)		81	223,153	12,000	139,900	1,962,730	223,153
Total equity offer (in %)		81	17.7%	4.0%	16.8%	48.0%	0.08
Exit strategies (1=yes; 0= no)		81	0.80	0	1.00	1.00	0.40
<b>Panel D: Summary statistics of key variables for entrepreneur</b>		<b>Obs</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>sd</b>
Proponents (number)		81	1.3	1.0	1.0	3.0	0.5
At least 1 female proponents		81	0.22	0	0	1.0	0.42
At least 1 ethnic minority proponent		81	0.19	0	0	1.0	0.39
<b>Panel E: Summary statistics of key variables for investors</b>		<b>Obs</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>Sd</b>
Investors per campaign (number)		81	106	8	83	394	81
Female investors per campaign (number)		81	20	1	12	125	24
Fraction of female investors per campaign (%)		81	17.5%	3.6%	15.4%	45.6%	0.09
Fraction of dollar amount female investors invested per campaign (%)		81	23.0%	1.7%	17.3%	50.6%	0.17
Ethnic minority investors per campaign (number)		81	19	1	15	75	16.73
Fraction of ethnic minority investors per campaign (%)		81	17.5%	6.3%	17.4%	35.5%	0.06
Fraction of dollar amount ethnic minority investors invested per campaign (%)		81	19.9%	0.9%	18.8%	70.7%	0.16
Dollar amount invested by personal investors (£)		8,600	2,102	0.23	250	1,394,612	16,186
Dollar amount invested by female investors (£)		1,603	1,766	2.3	200	139,461	6,284
Dollar amount invested by male investors (£)		6,997	2,179	0.23	263	1,394,612	17,690
Dollar amount invested by ethnic minority investors (£)		2,666	1,724	5.00	200	96,666	5,499
Dollar amount invested by dominant investors (£)		5,923	2,163	0.23	263	1,394,612	17,709
Dollar amount invested by serial investors (£)		2,526	794	0.23	147	51,560	2,713



**Table 2 - Frequency of ethnicity groups in the sample**

Ethnicity	Investors		Proponents	
	Obs	%	Obs	%
<b><i>Dominant</i></b>				
Anglo-Saxon	4.187	69,8%	77	73,3%
European	484	8,1%	7	6,7%
Oriental Block	176	2,9%	1	1,0%
Southern African	63	1,1%	1	1,0%
Israelian	22	0,4%	3	2,9%
<b><i>Minority</i></b>				
Asian	562	9,4%	11	10,5%
African	189	3,2%	2	1,9%
Latin American	157	2,6%	1	1,0%
Arabic	156	2,6%	2	1,9%
Total	5.996	100,0%	105	

**Table 3 - Gender similarity and ethnic similarity**

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<b>Panel A: Gender Similarity</b>			
<b>Female investor</b>	<b>Female proponent</b>		<b>Total</b>
	<b>No</b>	<b>Yes</b>	
<b>No</b>	5.476	1.521	6.997
	82,3%	78,2%	81,4%
<b>Yes</b>	1.178	425	1.603
	17,7%	21,8%	18,6%
<b>Total</b>	6.654	1.946	8.600
	100,0%	100,0%	100,0%

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<b>Panel B: Ethnic Similarity</b>			
<b>Investor ethnicity</b>	<b>Proponent ethnicity</b>		<b>Total</b>
	<b>Dominant</b>	<b>Minority</b>	
<b>Dominant</b>	5.684	1.348	7.032
	82,4%	78,7%	81,8%
<b>Minority</b>	1.203	365	1.568
	17,6%	21,3%	18,2%
<b>Total</b>	6.887	1.713	8.600
	100,0%	100,0%	100,0%

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<b>Panel C: Gender and Ethnic Similarities</b>			
<b>Gender similarity</b>	<b>Ethnic similarity</b>		<b>Total</b>
	<b>No</b>	<b>Yes</b>	
<b>No</b>	1.254	2.414	3.668
	46,5%	40,9%	42,7%
<b>Yes</b>	1.445	3.487	4.932
	53,5%	59,1%	57,4%
<b>Total</b>	2.699	5.901	8.600
	100,0%	100,0%	100,0%

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**Table 4 – Correlation matrix**

Variables	Log amount inv.	Gender similarity	Ethnic similarity	At least one female proponent	At least one ethnic minority proponent	Innovative	Firm Age	Team Size	Equity offering	Exit	Serial Investor
Ln(Amount invested)	1										
Gender similarity	0.0711*	1									
Ethnic similarity	0.0507*	0.0521*	1								
At least one female prop.	-0.1072*	-0.5451*	-0.1146*	1							
At least one ethnic minority proponent	-0.0175	-0.0774*	-0.3634*	0.0664*	1						
Innovative	-0.0316*	0.0261*	0.0074	-0.0941*	-0.0269*	1					
Firm age	0.1310*	0.0275*	0.0327*	-0.0339*	-0.1944*	0.0052	1				
Team size	-0.0959*	-0.0865*	0,004	0.0845*	0.1346*	0.0946*	-0.3396*	1			
Equity offering	-0.0177	0,0068	-0.0976*	-0.0233*	0.2650*	-0.1909*	-0.2601*	-0,0202	1		
Exit	-0.0286*	-0.0434*	-0.0265*	0.1405*	0.1124*	-0,0179	-0.0542*	0.5604*	0.0787*	1	
Serial investor	-0.1778*	0.0213*	-0.0545*	0.0405*	0.0427*	0.0402*	-0.0667*	-0,0196	0.0490*	0.0545*	1

**Table 5 – Similarity effect by gender and ethnicity groups of investors**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All sample	Female	Male	Dominant	Minority	Female - Dominant	Female - Minority	Male - Dominant	Male - Minority
Gender similarity	-0.089 (0.079)	-0.677*** (0.180)	0.236*** (0.083)	-0.296*** (0.095)	0.288* (0.151)	-0.752*** (0.213)	-0.931*** (0.337)	0.008 (0.101)	0.737*** (0.156)
Ethnic similarity	-0.049 (0.082)	0.116 (0.136)	-0.057 (0.108)	-0.435*** (0.093)	0.696*** (0.206)	-0.105 (0.148)	0.136 (0.379)	-0.552*** (0.125)	1.170*** (0.253)
Interaction [gender & ethnic similarity]	0.285*** (0.095)	0.114 (0.239)	0.284** (0.118)	0.510*** (0.111)	-0.259 (0.249)	-0.027 (0.270)	2.197*** (0.712)	0.645*** (0.140)	-0.976*** (0.297)
At least one female proponent	-0.409*** (0.065)			-0.479*** (0.073)	-0.299** (0.151)				
At least one ethnic minority proponent	0.412*** (0.062)	0.488*** (0.156)	0.377*** (0.067)						
Innovative	-0.088 (0.063)	-0.031 (0.158)	-0.089 (0.069)	-0.039 (0.069)	-0.374** (0.150)	-0.005 (0.175)	-0.298 (0.368)	-0.037 (0.075)	-0.368** (0.160)
Firm age	0.122*** (0.010)	0.073*** (0.023)	0.132*** (0.011)	0.121*** (0.011)	0.104*** (0.024)	0.083*** (0.024)	-0.010 (0.058)	0.130*** (0.012)	0.130*** (0.026)
Team size	0.245*** (0.042)	0.191* (0.114)	0.273*** (0.047)	0.288*** (0.047)	0.130 (0.106)	0.266** (0.121)	-0.120 (0.321)	0.333*** (0.054)	0.281** (0.114)
Equity offering	0.058 (0.273)	0.473 (0.767)	0.040 (0.294)	0.390 (0.296)	-0.360 (0.657)	1.148 (0.860)	-0.638 (1.747)	0.347 (0.319)	-0.291 (0.707)
Exit	0.697*** (0.134)	0.838*** (0.293)	0.686*** (0.150)	0.795*** (0.140)	0.070 (0.426)	0.999*** (0.289)	0.035 (0.861)	0.776*** (0.158)	0.179 (0.485)
Serial investor	-0.799*** (0.086)	-0.739*** (0.219)	-0.862*** (0.093)	-0.748*** (0.101)	-0.967*** (0.151)	-0.580** (0.255)	-1.250*** (0.418)	-0.837*** (0.109)	-0.952*** (0.160)
Constant	5.613*** (0.117)	5.528*** (0.255)	5.289*** (0.128)	5.857*** (0.135)	5.622*** (0.248)	5.524*** (0.308)	6.142*** (0.546)	5.537*** (0.146)	5.013*** (0.278)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8.600	1.603	6.997	7.032	1.568	1.336	267	5.696	1.301
R-squared	0,098	0,121	0,100	0,089	0,140	0,115	0,224	0,092	0,144
Adj. R-squared	0,096	0,114	0,098	0,087	0,132	0,107	0,188	0,090	0,136

Notes: This table reports the results of a OLS regression. The dependent variable is the log of amount invested by the individual investor in a single campaign for the overall sample (Mod. 1), for the sub-sample of female investors (Mod. 2) and male investors (Mod. 3), for the sub-sample of dominant investors (Mod. 4), for minority investors (Mod. 5) and the combination of gender and ethnicity of the investors: female investors that belong to the dominant ethnicity (Mod. 6), female investors that belong to the minority ethnicity (Mod. 7); male investors that belong to the dominant ethnicity (Mod. 8) and male investors that belong to the minority ethnicity (Mod.9) . The following company features' controls are included in the regression: **Firm age** is the the numbers of years from the firm's establishment to the date of the campaign, **Innovative** is a dummy variable equals one in case of companies active in highly innovative sectors, **Team size** computed as the log of number of people listed on the site to make up the group of executive around the entrepreneur. Two campaign structure controls are included as follows: **Equity offering** is the percentage of equity offered during the campaign, **Exit** is a dummy variable equals 1 if the exit strategy is explicit in the campaign and zero otherwise. The control variables related to the entrepreneur characteristics are the following: **At least one female proponent** is a dummy variable equals 1 in case of at least one female proponents among the overall numbers of proponents and zero otherwise, **At least one ethnic minority proponent** is a dummy variable equals 1 in case of at least one ethnic minority proponents among the overall numbers of proponents and zero otherwise. Variables related to the investor profile is **Serial investor** is a dummy variable equal to 1 for serial investors and zero for otherwise. Similarity effect rest on three variables: gender similarity effect - **Gender similarity** - is a dummy variable equals 1 in case of gender similarity between backers and proponents, ethnical similarity effect - **Ethnic similarity** - is a dummy variable equals 1 when backers and proponents share the same ethnicity and the interaction between ethnic and gender similarity - **Gender similarity & Ethnic similarity** - is a dummy variable equals 1 in case of gender and ethnic similarity between backers and proponents. All models include year-fixed effect dummies. The standard errors are robust and clustered around investors and are reported in parentheses. \*\*\*, \*\* and \* indicates statistical significance at the 1%, 5% and 10%, respectively.

**Table 6 – Shapley and Owen value decomposition of R<sup>2</sup>**

Group	Variable	Owen value	
		Ind. %R <sup>2</sup>	Group %R <sup>2</sup>
Similarity	Gender similarity	2,34	8,13
	Ethnic similarity	1,50	
	Gender & Ethnic similarity	4,29	
Entrepreneur characteristics	At least one female proponent	12,68	13,41
	At least one ethnic minority proponent	0,74	
Company characteristics	Innovative	1,44	30,06
	Firm age	19,03	
	Team size	9,59	
Campaign characteristics	Equity offering	0,19	1,12
	Exit	0,93	
Investor characteristics	Serial investor	47,27	47,27

Note: Under the general equation of (2), this table reports the fraction of the overall R-squared (per cent), explained by the different groups of characteristics – Owen value (Gr) - and the individual share (Ind) of the overall R-squared (per cent) associated with each variable belonging to a specific characteristic (Shapley decomposition). Note that these figures are median values within bootstrap percentile confidence intervals (level of confidence: 90%). This explains cases where Total is not always 100.00.

The following company characteristics are included in the regression: **Firm age** is the the numbers of years from the firm's establishment to the date of the campaign, **Innovative** is a dummy variable equals one in case of companies active in highly innovative sectors, **Team size** computed as the log of number of people listed on the site to make up the group of executive around the entrepreneur. Two campaign structure characteristics are included as follows: **Equity offering** is the percentage of equity offered during the campaign, **Exit** is a dummy variable equals 1 if the exit strategy is explicit in the campaign and zero otherwise. The variables related to the entrepreneur characteristics are the following: **At least one female proponent** is a dummy variable equals 1 in case of at least one female proponents among the overall numbers of proponents and zero otherwise, **At least one ethnic minority proponent** is a dummy variable equals 1 in case of at least one ethnic minority proponents among the overall numbers of proponents and zero otherwise. Variables related to the investor characteristics is **Serial investor** is a dummy variable equal to 1 for serial investors and zero for otherwise. Similarity effects rest on three variables: gender similarity effect - **Gender similarity** - is a dummy variable equals 1 in case of gender similarity between backers and proponents, ethnical similarity effect - **Ethnic similarity** - is a dummy variable equals 1 when backers and proponents share the same ethnicity and the interaction between ethnic and gender similarity - **Gender similarity & Ethnic similarity** - is a dummy variable equals 1 in case of gender and ethnic similarity between backers and proponents. **Year fixed effects** are not considered in the model.

**Table 7 – Shapley and Owen value decomposition of R2 by investors characteristics**

Group	Variable	Owen value							
		Female		Male		Dominant		Minority	
		Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2
Similarity	Gender similarity	21,60	27,74	7,32	15,64	2,32	8,82	4,78	7,30
	Ethnic similarity	0,93		2,34		1,15		1,69	
	Gender similarity & Ethnic similarity	5,21		5,99		5,35		0,84	
Entrepreneur characteristics	At least one female proponent	-	-	-	-	15,41	15,41	5,95	5,95
	At least one ethnic minority proponent	2,09	2,09	0,68	0,68	-	-	-	-
Company characteristics	Innovative	3,04	44,98	0,94	26,27	0,78	29,75	6,85	31,22
	Firm age	8,12		20,03		20,90		12,55	
	Team size	33,82		5,30		8,07		11,82	
Campaign characteristics	Equity offering	0,39	6,31	0,34	0,89	0,24	1,21	0,46	3,17
	Exit	5,92		0,55		0,96		2,71	
Investor characteristics	Serial investor	18,88	18,88	56,51	56,51	44,82	44,82	52,35	52,35

  

Group	Variable	Owen value							
		Female - Dominant		Female - Minority		Male - Dominant		Male - Minority	
		Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2
Similarity	Gender similarity	28,73	42,12	5,35	30,07	6,04	16,29	14,19	19,98
	Ethnic similarity	0,71		3,03		2,20		3,10	
	Gender & Ethnic similarity	12,68		21,69		8,04		2,69	
Company characteristics	Innovative	2,20	40,64	7,25	34,40	0,42	25,52	5,14	25,28
	Firm age	8,86		2,95		21,29		14,19	
	Team size	29,58		24,20		3,81		5,94	
Campaign characteristics	Equity offering	0,84	6,24	0,17	4,61	0,43	1,26	0,60	2,62
	Exit	5,40		4,44		0,83		2,02	
Investor characteristics	Serial investor	11,01	11,01	30,92	30,92	56,94	56,94	52,13	52,13

Note: Under the general equation of (2), this table reports the fraction of the overall R-squared (per cent), explained by the different groups of characteristics – Owen value (Gr) - and the individual share (Ind) of the overall R-squared (per cent) associated with each variable belonging to a specific characteristic (Shapley decomposition). Note that these figures are median values within bootstrap percentile confidence intervals (level of confidence: 90%). This explains cases where Total is not always 100.00.

Results are showed for the sub-sample of female investors (Mod. 2) and male investors (Mod. 3), for the sub-sample of dominant investors (Mod. 4), for minority investors (Mod. 5) and the combination of gender and ethnicity of the investors: female investors that belong to the dominant ethnicity (Mod. 6), female investors that belong to the minority ethnicity (Mod. 7); male investors that belong to the dominant ethnicity (Mod. 8) and male investors that belong to the minority ethnicity (Mod.9).

Year fixed effects are not included.

The following company characteristics are included in the regression: **Firm age** is the the numbers of years from the firm's establishment to the date of the campaign, **Innovative** is a dummy variable equals one in case of companies active in highly innovative sectors, **Team size** computed as the log of number of people listed on the site to make up the group of executive around the entrepreneur. Two campaign structure characteristics are included as follows: **Equity offering** is the percentage of equity offered during the campaign, **Exit** is a dummy variable equals 1 if the exit strategy is explicit in the campaign and zero otherwise. The variables related to the entrepreneur characteristics are the following: **At least one female proponent** is a dummy variable equals 1 in case of at least one female proponents among the overall numbers of proponents and zero otherwise, **At least one ethnic minority proponent** is a dummy variable equals 1 in case of at least one ethnic minority proponents among the overall numbers of proponents and zero otherwise. Variables related to the investor characteristics: **Serial investor** is a dummy variable equal to 1 for serial investors and zero for otherwise. Similarity effects rest on three variables: gender similarity effect - **Gender similarity** - is a dummy variable equals 1 in case of gender similarity between backers and proponents, ethnical similarity effect - **Ethnic similarity** - is a dummy variable equals 1 when backers and proponents share the same ethnicity and the interaction between ethnic and gender similarity - **Gender similarity & Ethnic similarity** - is a dummy variable equals 1 in case of gender and ethnic similarity between backers and proponents.



**Table 8 – Similarity effect by gender and ethnicity groups of non-serial investors**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All sample	Female	Male	Dominant	Minority	Female - Dominant	Female - Minority	Male - Dominant	Male - Minority
Gender similarity	-0.037 (0.092)	-0.801*** (0.199)	0.417*** (0.113)	-0.225** (0.111)	0.330* (0.171)	-0.821*** (0.240)	-1.114*** (0.362)	0.144 (0.135)	0.949*** (0.210)
Ethnic similarity	-0.065 (0.099)	0.149 (0.150)	-0.150 (0.143)	-0.438*** (0.111)	0.757*** (0.268)	0.012 (0.163)	-0.204 (0.492)	-0.737*** (0.161)	1.479*** (0.352)
Interaction [gender & ethnic similarity]	0.222* (0.114)	0.049 (0.257)	0.294* (0.157)	0.428*** (0.131)	-0.252 (0.326)	-0.218 (0.296)	3.302*** (0.758)	0.750*** (0.181)	-1.343*** (0.413)
At least one female proponent	-0.602*** (0.076)			-0.693*** (0.084)	-0.387** (0.181)				
At least one ethnic minority proponent	0.377*** (0.079)	0.464** (0.183)	0.332*** (0.088)						
Innovative	-0.102 (0.082)	-0.064 (0.181)	-0.104 (0.093)	-0.072 (0.089)	-0.384* (0.217)	-0.077 (0.191)	-0.282 (0.590)	-0.083 (0.101)	-0.395* (0.232)
Firm age	0.133*** (0.012)	0.068*** (0.025)	0.153*** (0.014)	0.139*** (0.013)	0.102*** (0.030)	0.079*** (0.026)	0.028 (0.066)	0.160*** (0.015)	0.131*** (0.034)
Team size	0.300*** (0.056)	0.181 (0.132)	0.357*** (0.064)	0.351*** (0.060)	0.128 (0.149)	0.277** (0.140)	-0.055 (0.359)	0.440*** (0.071)	0.336** (0.166)
Equity offering	0.257 (0.343)	0.474 (0.927)	0.303 (0.378)	0.531 (0.370)	0.188 (0.878)	1.268 (1.010)	0.502 (2.462)	0.557 (0.409)	0.381 (0.951)
Exit	0.785*** (0.164)	1.233*** (0.328)	0.719*** (0.186)	0.908*** (0.167)	-0.195 (0.646)	1.262*** (0.336)	-0.278 (0.736)	0.867*** (0.192)	-0.061 (0.653)
Constant	5.513*** (0.133)	5.485*** (0.277)	5.010*** (0.155)	5.739*** (0.153)	5.458*** (0.295)	5.396*** (0.333)	5.544*** (0.682)	5.275*** (0.174)	4.659*** (0.352)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,074	1,381	4,693	5,000	1,074	1,164	217	3,836	857
R-squared	0.083	0.116	0.075	0.082	0.103	0.123	0.199	0.075	0.114
Adj. R-squared	0.0809	0.109	0.0731	0.0796	0.0926	0.115	0.160	0.0723	0.102

Notes: This table reports the results of a OLS regression. The dependent variable is the log of amount invested by the individual investor in a single campaign for the overall sample (Mod. 1), for the sub-sample of female investors (Mod. 2) and male investors (Mod. 3), for the sub-sample of dominant investors (Mod. 4), for minority investors (Mod. 5) and the combination of gender and ethnicity of the investors: female investors that belong to the dominant ethnicity (Mod. 6), female investors that belong to the minority ethnicity (Mod. 7); male investors that belong to the dominant ethnicity (Mod. 8) and male investors that belong to the minority ethnicity (Mod.9) . The following company features' controls are included in the regression: **Firm age** is the the numbers of years from the firm's establishment to the date of the campaign, **Innovative** is a dummy variable equals one in case of companies active in highly innovative sectors, **Team size** computed as the log of number of people listed on the site to make up the group of executive around the entrepreneur. Two campaign structure controls are included as follows: **Equity offering** is the percentage of equity offered during the campaign, **Exit** is a dummy variable equals 1 if the exit strategy is explicit in the campaign and zero otherwise. The control variables related to the entrepreneur characteristics are the following: **At least one female proponent** is a dummy variable equals 1 in case of at least one female proponents among the overall numbers of proponents and zero otherwise, **At least one ethnic minority proponent** is a dummy variable equals 1 in case of at least one ethnic minority proponents among the overall numbers of proponents and zero otherwise. Variables related to the investor profile is **Serial investor** is a dummy variable equal to 1 for serial investors and zero for otherwise. Similarity effect rest on three variables: gender similarity effect - **Gender similarity** - is a dummy variable equals 1 in case of gender similarity between backers and proponents, ethnical similarity effect - **Ethnic similarity** - is a dummy variable equals 1 when backers and proponents share the same ethnicity and the interaction between ethnic and gender similarity - **Gender similarity & Ethnic similarity** - is a dummy variable equals 1 in case of gender and ethnic similarity between backers and proponents. All models include year-fixed effect dummies. The standard errors are robust and clustered around investors and are reported in parentheses. \*\*\*, \*\* and \* indicates statistical significance at the 1%, 5% and 10%, respectively.

**Table 9 – Shapley and Owen value decomposition of R2 by non-serial investors characteristics**

Group	Variable	Owen value									
		All		Female		Male		Dominant		Minority	
		Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2
Similarity	Gender similarity	5.41	11.38	31.07	41.20	21.16	33.19	4.58	11.97	12.18	19.24
	Ethnic similarity	0.97		1.53		2.58		1.39		4.76	
	Gender similarity & Ethnic similarity	0.14		8.60		9.45		5.99		2.31	
Entrepreneur characteristics	At least one female proponent	30.26	31.45		3.04		0.87	33.83	33.83	15.25	15.25
	At least one ethnic minority proponent	1.20		3.04		0.87					
Company characteristics	Innovative	3.29	54.78	4.27	49.09	2.76	63.13	2.52	51.56	9.70	62.08
	Firm age	35.42		8.83		49.99		36.47		25.39	
	Team size	16.06		35.99		10.38		12.56		26.99	
Campaign characteristics	Equity offering	0.42	2.39	0.37	6.66	0.84	2.80	0.47	2.63	0.46	3.42
	Exit	1.97		6.29		1.95		2.16		2.96	
Group	Variable	Owen value									
		Female - Dominant		Female - Minority		Male - Dominant		Male - Minority			
		Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2	Ind. %R2	Group %R2
Similarity	Gender similarity			35.09	54.04	9.30	63.19	16.40	34.86	34.38	51.58
	Ethnic similarity			0.96		5.59		4.59		9.19	
	Gender & Ethnic similarity			17.97		48.30		13.87		8.01	
Company characteristics	Innovative			3.66	40.01	4.97	30.15	1.99	61.17	7.13	46.61
	Firm age			8.16		3.99		52.31		26.54	
	Team size			28.19		21.19		6.86		12.94	
Campaign characteristics	Equity offering			0.65	5.95	0.22	6.65	1.14	3.97	0.43	1.81
	Exit			5.30		6.43		2.83		1.38	

Note: Under the general equation of (2), this table reports the fraction of the overall R-squared (per cent), explained by the different groups of characteristics – Owen value (Gr) - and the individual share (Ind) of the overall R-squared (per cent) associated with each variable belonging to a specific characteristic (Shapley decomposition). Note that these figures are median values within bootstrap percentile confidence intervals (level of confidence: 90%). This explains cases where Total is not always 100.



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