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Geopolitical risk and crowdfunding performance

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ABSTRACT

The most pronounced risk that fund providers assume in rewards-based crowdfunding is reward delivery. Developing markets around the world exhibit geopolitical risks (GPR) that impact the likelihood that the rewards will be delivered. Hence, this points towards a potential association between GPR and the likelihood of successful crowdfunding financing. This paper examines 1,672 fundraising attempts from the 19 developing countries listed in the GPR index. The data indicate that GPR is negatively associated with the likelihood of crowdfunding success. Further, the evidence shows that entrepreneurs can moderate the costs of GPR via signaling and campaign disclosures. Implications for policymakers and entrepreneurs are discussed.

1. Introduction

Entrepreneurial activities play a significant role in spurring job creation and economic growth (Urbano et al., 2019). Despite their importance, entrepreneurs in developing countries face financial constraints due to inadequate financing opportunities (e.g., bank loans) that are more accessible for entrepreneurs in developed countries (Jacoby et al., 2019). This financing barrier is amplified by the lack of credit safety laws and the absence of refined information systems in developing countries (Abraham and Schmukler, 2017; Beck, 2007; Y. Wang, 2016). These constraints hinder the potential growth of entrepreneurial activities in much of the developing world.

One solution for the financial constraints faced by entrepreneurs in developing countries is international reward-based crowdfunding. This novel method of financing entrepreneurial endeavors has been growing in popularity since the late 2000 s. Reward-based crowdfunding sites are internet platforms used by entrepreneurs to finance projects via the crowd in exchange for rewards (Belleflamme et al., 2014; Gierczak et al., 2016; Hornuf and Schwienbacher, 2016). The functioning of crowdfunding platforms is best described by the adage "many a little makes a mickle", where large investments are raised through the accrual of small investments from a large group of backers (Gierczak et al., 2016). Although crowdfunding is relatively nascent, its prominence has grown over the years and it now serves as a significant source of financing for entrepreneurs worldwide (Block et al., 2018; Jiang et al., 2022). Since its inception in 2009, the leading reward-based crowdfunding platform, Kickstarter, has helped entrepreneurs raise more than $5 billion to finance ventures. Kickstarter is a U.S.-based platform that is used globally by entrepreneurs, including those from developing countries (Funk, 2016). In this way, Kickstarter provides entrepreneurs from developing countries with a novel avenue to access

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international consumers and financers. However, little attention has been paid to the crowdfunding performance of entrepreneurs from developing countries given that most individuals that choose to back Kickstarter campaigns are located in developed countries (e.g., Canada, Germany, the United Kingdom, and the United States).

Extant crowdfunding literature discusses the drivers of entrepreneurs' fundraising campaign performance on crowdfunding platforms (Cumming et al., 2019; Kraus et al., 2016; Mollick, 2014). The drivers that are most often investigated involve dimensions of entrepreneur quality (human and social capital signals), campaign quality (media and textual content), and linguistic style. These drivers generally act as determinants of campaign performance by giving signals that backers incorporate into their decision-making process when evaluating the quality of an entrepreneur. Moving away from the performance drivers that are already established in the literature, we examine the extent to which the geopolitical risk (GPR) of the entrepreneurs' home country influences backers deciding whether to back an entrepreneur based in a developing country. Then, with evidence that entrepreneurs experiencing GPR enjoy less success, we draw on signaling theory, analyzing whether this is moderated by characteristics of the entrepreneur or the crowdfunding campaign. Signaling theory posits that asymmetric information between parties can be reduced through signals, sent by one party and interpreted by another (Connelly et al., 2011). Signaling theory plays a prominent role in entrepreneurial finance (Alsos and Ljunggren, 2017), and by extension, crowdfunding (Courtney et al., 2017; Steigenberger and Wilhelm, 2018). We analyze the effects of several factors which we believe to be the most likely to serve as signals to backers that the effects of GPR on project fulfillment will be moderated.

GPR is an important macro-environmental factor to consider, especially given recent conflicts such as the Russian invasion of Ukraine which has had serious economic consequences globally (Liadze et al., 2022). Caldara and Iacoviello (2022), were among the first to define and build a reliable GPR index. According to them, GPR is best defined as "*the risk associated with wars, terrorist acts, and tensions between states that affect the normal and peaceful course of international relations*". Their GPR index reflects global events and uncertainties as they are seen and documented in the press. It is constructed using an algorithm that tracks eleven internationally recognized, English-based newspapers, for terms related to geopolitical tensions in 19 developing countries. The global GPR index is successful in recognizing major events with geopolitical consequences such as the outbreaks of World War I, World War II, the Gulf war, and the September 11 attacks. Furthermore, the index is robust, detecting many types of geopolitical and political tensions (Alqahtani et al., 2021).

GPR is highlighted as a possible driver of economic conditions, prompting increased discussion about the relation between macro-uncertainty and economics (Skaperdas, 2008). Because of increasing levels of political conflict, war, and terrorism in the twenty-first century, research on the economic effect of GPR has garnered much interest (Blattman and Miguel, 2010). Recent research has linked the GPR index to investor confidence (Al Mamun et al., 2020), financial market performance (Balcilar et al., 2018; Das et al., 2019; Kannadhasan and Das, 2020), energy transition (Alsagr and van Hemmen, 2021), and global trade (Kannadhasan and Das, 2020). However, the influence of GPR on entrepreneurial crowdfunding performance is relatively unknown.

According to Mollick (2014), the likelihood of reward delivery is one of the backers' primary considerations when deciding whether to back a crowdfunding campaign. Additionally, given that GPR is associated with reward delivery uncertainty which could be driven by the inability to finalize the project, we use the novel GPR index, developed by Caldara and Iacoviello (2022), to investigate its effect on entrepreneurial fundraising performance. The construction of the GPR index makes it a plausible proxy for perceived country risk by unsophisticated investors (crowdfunding backers). Thus, we posit that backers are less likely to fund projects from countries with greater GPR because the perceived likelihood of reward delivery is lower. If true, this would translate into decreased performance by crowdfunding campaigns from countries facing GPR, all else being equal. We then test whether the adverse effects of GPR are moderated by different signals pertaining to the characteristics of the entrepreneurs or the crowdfunding campaigns. Specifically, we test the interaction effects of GPR and the entrepreneur's perceived narcissism, the entrepreneur's gender, the size of the campaign goal, and the entrepreneur's track record of crowdfunding success.

We use a sample of 1,672 campaigns listed on Kickstarter from the 19 countries included in the GPR index. We find strong evidence that crowdfunding performance is inhibited by GPR. Going further, we find evidence that while the entrepreneur's use of narcissistic rhetoric has a negative effect on campaign performance generally, it moderates the negative effect of GPR in such contexts. Similarly, our findings suggest that while projects with larger funding goals underperform generally, the negative effect of GPR is moderated by higher campaign funding goals. Finally, we find evidence that the negative effect of GPR is also moderated by the entrepreneur's track record of successful campaign launches. We theorize that our results stem from the signals sent by narcissistic rhetoric, campaign funding requirements, and past success, which reduces concerns over GPR.

We believe that our focus on GPR is appropriate since we study rewards-based crowdfunding and the delivery of rewards from countries with GPR is likely to be perceived as more uncertain. This could be due to the inability of the entrepreneurs to finalize their projects and fulfill the rewards. Other crowdfunding studies have indeed investigated the effect of different macro-variables on crowdfunding performance. For instance, Meoli et al. (2020) consider international differences related to financial literacy because financial literacy is needed for understanding crowdfunding investment with debt and equity securities. And, other evidence of cleantech crowdfunding has been studied in relation to cultural conditions across countries since there are close connections with cultural conditions and incentives to engage in projects that have community benefits (Cumming et al., 2017). Di Pietro and Butticé (2020) link macro-environmental factors (institutional setting) to the development of crowdfunding. We attempt to go further, exploring new insights into the influence of macro-environmental factors on entrepreneurial fundraising performance.

Our study contributes to the reward-based crowdfunding literature by highlighting the adverse influence of macro-uncertainties on entrepreneurial fundraising performance. Our work complements the recent work of Hsieh and Vu (2021), who investigate the effect of U.S. economic policy uncertainty on U.S.-based crowdfunding campaigns. Building on the real-option theory, they show that U.S.-based crowdfunding campaigns perform better during periods of high economic policy uncertainty. However, these findings do not

necessarily extend to international crowdfunding efforts on U.S. crowdfunding platforms, since the entrepreneurs are located abroad while the majority of backers are from the United States. To this end, we introduce the GPR index to the context of international crowdfunding campaigns on U.S.-based platforms. To the best of our knowledge, this is the first attempt to investigate the adverse impact of GPR on entrepreneurial crowdfunding performance. We go further, exploring the role of entrepreneurial and campaign characteristics in moderating the adverse effects of GPR in developing countries. We believe that the international reward-based crowdfunding setting offers a unique context for studying the negative effects of GPR, enriching both the crowdfunding and GPR literature.

The paper is organized as follows. In Section 2, we review the literature and develop the hypotheses. In Section 3, we describe the data and methodology used. We then follow with a presentation of the results in Section 4. Section 5 concludes the paper and offers a discussion of the implications and limitations.

2. Literature review & hypotheses development

2.1. Crowdfunding and campaign performance

For entrepreneurs, securing the necessary financing is among the most difficult aspects of starting and successfully running a new business (Belleflamme et al., 2014; Butticè et al., 2018; Mollick, 2014). During the early stages of business ventures, entrepreneurs face significant challenges obtaining the financial resources necessary to develop new products and modernize technologically (Bagheri et al., 2019; Cholakova and Clarysse, 2015). Crowdfunding is an attractive alternative for many entrepreneurs, enabling them to receive the necessary financing while avoiding the frictions involved with angel investors, bank loans, and venture capital financing (Choy and Schlagwein, 2016; Colombo et al., 2015; Lehner et al., 2015). Thus, as defined by Mollick (2014), "crowdfunding allows founders of for-profit, artistic, and cultural ventures to fund their efforts by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries." (p. 1).

Of the crowdfunding models, the rewards-based model attracts the most academic interest, because it is used by the primary crowdfunding platforms. The rewards-based model allows entrepreneurs to award non-monetary tokens of appreciation or tangible products in return for crowdfunding contributions, instead of relinquishing equity (Chan et al., 2020; Mollick, 2014; Schwienbacher and Larralde, 2012). Reward-based crowdfunding is considered the most publicly familiar crowdfunding model, in which backers contribute to projects without any monetary returns (Mollick, 2014). Instead, they expect to receive the material (e.g. real products) or immaterial (e.g. thank-you letters) compensation for their contributions (Gerber et al., 2012). Reward-based crowdfunding platforms are two-sided markets (Tomczak and Brem, 2013). On the demand side, entrepreneurs launch their campaigns and request funding for their projects. On the supply side, backers choose crowdfunding campaigns to contribute to. These two-sided markets are operated through crowdfunding platforms such as Kickstarter, which serve as online intermediaries.

On Kickstarter, a crowdfunding project is successful if the entrepreneur achieves the necessary financing within a given timeframe (Cumming et al., 2019). Numerous studies consider the determinants of crowdfunding success, often focusing on characteristics of the crowdfunding campaign or the entrepreneur's characteristics, personality, and past crowdfunding performance. As for the characteristics of the entrepreneurs that affect crowdfunding campaign outcomes, women are found to enjoy greater crowdfunding success (Johnson et al., 2018). Davis et al. (2021) posit that this occurs because of altruistic backers wanting to contribute economically to traditionally disadvantaged entrepreneurs. Recent studies suggest that another factor contributing to the crowdfunding success of women, is that they may be more likely to engage in choice homophily and back campaigns launched by entrepreneurs more like themselves (Greenberg and Mollick, 2017; Groza et al., 2020). Regarding personality traits, researchers have focused on the use of narcissistic rhetoric by entrepreneurs, finding that campaigns launched by narcissistic entrepreneurs perform worse (Anglin et al., 2018b; Bollaert et al., 2020; Buttice and Rovelli, 2020).

Considering campaign characteristics, success likelihood is found to be greater when the fundraising goal is lower (Belleflamme et al., 2014; Cumming et al., 2019; Mollick, 2014). Multimedia content (e.g. videos and images) is found to signal greater preparation and reduce information asymmetries, leading to increased campaign legitimacy and performance (Anglin et al., 2018a; Calic and Mosakowski, 2016; J. Yang et al., 2020; L. Yang and Hahn, 2015). Finally, a strand of crowdfunding literature focuses on entrepreneurs with multiple crowdfunding attempts, highlighting the importance of the entrepreneur's track record as a determinant of subsequent crowdfunding performance. Previous crowdfunding success is found to be positively associated with the success of subsequent campaigns (Lee and Chiravuri, 2019; Sewaid et al., 2021a). However, concerning the level of funding, an entrepreneur's past crowdfunding performance exhibits a cycling trajectory (Sewaid et al., 2021c).

The prevailing reward-based crowdfunding literature focuses on crowdfunding campaign performance through the lens of entrepreneur and campaign characteristics. Thus, the susceptibility of reward-based crowdfunding campaigns to the macro-environmental context has attracted scant attention (Butticè et al., 2019; Di Pietro and Butticè, 2020). This concern is not trivial given that the impact of macro-environmental factors is perceptible in every financing corridor. Thus, in the present study, we attempt to illuminate the impact of GPR on crowdfunding campaign performance and the differential effect had by GPR given the characteristics of entrepreneurs and campaigns.

2.2. Country risk and campaign performance

Knight Frank (1921) defines uncertainty as "peoples' inability to forecast the likelihood of events happening". According to Bloom (2014), uncertainty is a broader concept that reflects the ambiguity in the minds of decision-makers (e.g., managers and investors). For

instance, volatile gross domestic product (GDP) growth affects investment decisions, production schedules, and consumption habits. The broad nature of uncertainty implies that no single measure captures it (Bloom, 2014). Prior studies have utilized different proxies for uncertainty, ranging from the volatility of economic indicators (Bekaert et al., 2013) to the news published in daily newspapers. Extant empirical literature affirms the negative effects of uncertainty on the economy (Baker et al., 2016). Moreover, the severe adverse effects of uncertainty are amplified for developing economies that do not have sufficient resources to combat them (World Bank Group, 2014; Koren and Tenreyro, 2007).

Local uncertainty reduces the profitability of businesses from local activities. When firms perceive instability in their home country as a significant obstacle, they focus on international markets to sustain their operations (Kapri, 2019). Alternatively, customers are reluctant to deal with foreign suppliers from countries with political instability, fearing delivery delays (Fosu, 2003). Thus, country-level stability affects a firm's ability to conduct both domestic and international transactions. This, in turn, harms the productiveness of the overall market, reducing profitability (Papon et al., 2017). During times of uncertainty, local investors in developing countries adopt a 'wait and see' strategy, delaying their investment decisions (Cheng and Chiu, 2018; Gilchrist et al., 2014). Markets with greater uncertainty lose the trust of foreign investors, reducing foreign investment (Barro, 1991; Campos et al., 2020). Therefore, firms in countries with greater uncertainty face difficulties attracting both local and international investors.

There has been recent interest in the effects of GPR on microeconomic and macroeconomic factors (Fania et al., 2020). Indeed, GPR plays an important role in the volatility of global financial activities. GPR causes investors to rethink their assumptions about the viability of government initiatives in various nations (Al Mamun et al., 2020). For example, Russia's military invasion of Ukraine has led several multinational companies to cease operations in Russia. Similarly, GPR can deteriorate foreign direct investment and disrupt global supply chains (Al Mamun et al., 2020). Recent studies highlight the association of the GPR index with investor confidence (Caldara and Iacoviello, 2022; Al Mamun et al., 2020), the performance of capital markets (Balcilar et al., 2018; Das et al., 2019; Kannadhasan and Das 2020), and international trade (Kotcharin and Maneenop, 2020). Thus, nations affected by GPR, face higher transaction costs, higher instability, lower consumer demand, and diminished cash flow (Al Mamun et al., 2020).

In the reward-based crowdfunding context, backers act as the consumers and financiers. As consumers, backers are mainly concerned with reward quality and the likelihood of reward delivery (Mollick, 2014). As financiers, they are concerned with the risk of financing the production process. It is unclear how potential backers incorporate macroeconomic uncertainty into the decision-making process when deciding whether to back a crowdfunding campaign. In general, we believe that macroeconomic uncertainty indexes (e.g., Economic Instability Index) are less relevant for backers on reward-based crowdfunding platforms since they are developed using variables that are less perceptible to the typical crowdfunding backer (i.e. military spending). Alternatively, indexes generated from newspaper articles are more reflective of the general public's assessment of the level of uncertainty in a given country.

To that end, the two primary uncertainty indexes based on newspaper articles are the Economic Policy Uncertainty (EPU) index and the GPR Index. The EPU index covers 22 countries and is built using local news in the local language. We suspect that these articles are not generally accessible to US and international backers due to unfamiliarity and possible language barriers. As for the GPR index, it tracks eleven internationally recognized English-based newspapers. Given that the majority of Kickstarter backers are located in the US, we believe that the GPR index captures information that the average backer is familiar with. For instance, the GPR index identified well-known events such as tensions during the Gulf Wars. Thus, we believe that it captures information that backers would incorporate into their decision-making process when interested in a Kickstarter campaign.

Although GPR is unlikely to be associated with reward quality, we believe that uncertainty related to GPR may be internalized by backers when assessing the risk associated with the fulfillment of the project. Indeed, a primary concern of backers on reward-based crowdfunding platforms is whether a promised reward will ultimately be delivered (Mollick, 2014). Backers may assume a lower likelihood of reward delivery when considering funding crowdfunding projects from regions with higher levels of GPR. This could be due to geopolitical tensions affecting the ability of entrepreneurs to finalize their projects or due to logistic difficulties. Thus, reducing the likelihood that backers would contribute to such campaigns, causing them to perform worse. These arguments culminate in the following hypothesis:

Hypothesis 1. *GPR is negatively associated with crowdfunding campaign performance.*

2.3. The moderating role of entrepreneur and campaign characteristics

Having established evidence that GPR reduces the likelihood of crowdfunding success, we move to considering factors which may moderate the effects of GPR. To this end, we focus on four characteristics of the entrepreneur and the campaign which we believe have the highest likelihood of having a moderating role. Crowdfunding projects are not homogeneous, they differ greatly based on the characteristics of the entrepreneur, the size of the campaign, and the entrepreneur's crowdfunding performance track record. In addition to affecting campaign performance directly, these distinctions may affect the level of significance that backers attribute to perceived GPR associated with campaigns based in affected regions. On the one hand, certain entrepreneur/campaign characteristics could serve as signals that reassure backers of the project's resilience in the face of external risk factors, moderating the adverse effects of GPR. On the other hand, other entrepreneur/campaign characteristics could signal to backers that the project is more vulnerable to external risk factors, thereby exacerbating GPR effects. We focus on four factors that we believe are the most likely to moderate or exacerbate the effects of GPR. These are: the entrepreneur's use of narcissistic rhetoric, the gender of the entrepreneur, the size of the campaign's goal, and the entrepreneur's track record of crowdfunding success or failure.

Narcissistic entrepreneurs tend to exhibit overconfidence in their abilities. Excessive self-confidence is demonstrated via linguistic rhetoric (verbal or written). Indeed, in different settings, linguistic rhetoric has been used to infer entrepreneurial and managerial

character traits (Craig and Amernic, 2011; Steigenberger and Wilhelm, 2018). In the context of crowdfunding, the literature establishes a negative relation between narcissistic rhetoric and campaign performance (Anglin et al., 2018b; Bollaert et al., 2020; Buttice and Rovelli, 2020). This is due to narcissistic entrepreneurs being perceived as overly aggressive, overconfident, and arrogant by potential backers (Campbell et al., 2004; Ronningstam, 2005). Although the adverse direct effect of narcissistic rhetoric on campaign performance has been established, we believe that narcissistic rhetoric may have a positive indirect effect on campaign performance in the context of GPR. This would not be unprecedented as prior studies show evidence that the negative effect of narcissistic rhetoric on crowdfunding success is moderated by campaign characteristics (Patel et al., 2021), demonstrating that the relation is context-dependent. Narcissistic entrepreneurs tend to refer to themselves directly, associating their project with themselves. This may emphasize the entrepreneur's active role in the venture, increasing the entrepreneur's perceived accountability. Thus, by appearing to play a more active role in the venture, by appearing more personally "*in charge*", and by expressing overconfidence in their abilities, the narcissistic entrepreneur may appear less susceptible to external risks from the backer's perspective. Therefore, the adverse effects of GPR may be moderated by the backers' perception that the entrepreneur is narcissistic. With these arguments, we hypothesize that:

Hypothesis 2. *The negative effect of GPR is moderated by the entrepreneur's use of narcissistic rhetoric*.

Women face disproportionate barriers when attempting to finance entrepreneurial endeavors (Forrester and Neville, 2021; Wu et al., 2019). This constraint contributes to women being underrepresented among entrepreneurs. In the realm of crowdfunding, there has been recent interest in equity crowdfunding's ability to democratize entrepreneurial finance, thereby easing financing access for traditionally underrepresented groups (Allen et al., 2021; Butticè and Vismara, 2021; Cumming et al., 2021; Coakley and Lazos, 2021; Rossi et al., 2021). While some underrepresented populations are more likely to turn to equity crowdfunding successfully, the evidence does not indicate that this applies to women (Cumming et al., 2021) who are found to be less aware of the option of crowdfunding as well (Vaznyte et al., 2020).

Despite less representation, crowdfunding projects launched by women significantly outperform those launched by men (Johnson et al., 2018). Still, women remain underrepresented in crowdfunding settings. This is primarily due to women being less likely to launch crowdfunding campaigns (Kuppuswamy and Mollick, 2016), a factor that is attributed to women being less confident in their abilities. This leads to less able men being more likely to pursue crowdfunding endeavors than less able women. By demonstrating a lack of self-confidence, individuals are more likely to be perceived as vulnerable to external risks. Thus, the adverse effects of GPR may be exacerbated for crowdfunding campaigns launched by women. Moreover, from a gender role perspective, women are perceived as being more feminine, agreeable, compassionate, and selfless (Grijalva et al., 2015). Such *stereotypical* attributes may be considered by backers as factors that would exacerbate the increased risks to project fulfillment in the face of GPR. Thus, we hypothesize:

Hypothesis 3. *The negative effect of GPR is amplified for female entrepreneurs*.

Kickstarter employs an all-or-nothing funding mechanism (Cumming et al., 2019), such that the project goal must be met before any funds are transferred to the entrepreneur. When campaign goals are large, individual crowdfunding backers play a less pivotal role (Zvilichovsky et al., 2018), having less of an impact on the project (Kuppuswamy and Bayus, 2017). Moreover, projects with larger goals typically require more backers to be successful. Given these two factors, crowdfunding projects with larger goals tend to be less successful (Mollick, 2014). However, although larger projects are less likely to succeed generally, we believe that the effect of project size on performance may be altered for projects launched from regions experiencing GPR. This could occur because a backer concerned with GPR affecting the likelihood of reward delivery may be more likely to back larger projects from regions with GPR since their contribution is only transferred to the entrepreneur if sufficient backers from the crowd contribute to the project as well. To this end, backers rely on the crowd validation effect. From a more traditional perspective, larger ventures are generally more capable of sustaining external risks and perform better in times of crisis. These arguments culminate in the following hypothesis:

Hypothesis 4. *The negative effect of GPR is lessened for campaigns with larger goals*.

Most crowdfunding project founders return to crowdfunding platforms to fund subsequent projects (Sewaid et al., 2021c). The reward-based crowdfunding literature establishes a marked difference between experienced and inexperienced entrepreneurs (Lee and Chiravuri, 2019). Moreover, what crowdfunding campaigns offer and what backers buy are not the already developed and produced rewards, but rather the concept of prospective future rewards (Rose et al., 2021). This poses a decision-making challenge for backers deciding whether to invest in a currently non-existing reward that will only be produced if the crowdfunding campaign succeeds. Therefore, an entrepreneur's prior crowdfunding success or failure may play an important role, affecting the backer's perception of reward delivery likelihood, especially in contexts of increased uncertainty such as with GPR.

Generally, entrepreneurs with successful crowdfunding track records outperform novice entrepreneurs and entrepreneurs with unsuccessful track records (Sewaid et al., 2021b). A successful crowdfunding track record is a signal of the entrepreneur's ability. During times of elevated risk, investors generally allocate their funds to less risky investment portfolios (Deyoung et al., 2015). In the crowdfunding context, a campaign founded by an entrepreneur with a successful track record may appear less risky. Backers may expect entrepreneurs with successful track records to be more capable of navigating difficulties during times of greater risk. Thus, the adverse effect of GPR may be lessened for entrepreneurs with prior success. As for entrepreneurs with unsuccessful track records, their previous failures likely signal weaker entrepreneurial abilities relative to both entrepreneurs with a successful track record and entrepreneurs with no crowdfunding experience. Thus, we expect campaigns founded by entrepreneurs with unsuccessful track records to face a greater adverse effect from GPR. These considerations are summarized in the following hypotheses:

Hypothesis 5a. *The negative effect of GPR is moderated by previous successful campaign launches*.

Hypothesis 5b. *The negative effect of GPR is amplified by previous unsuccessful campaign launches.*

3. Data & methods

3.1. Data

Kickstarter is the leading reward-based crowdfunding platform worldwide, spanning six continents and more than 150 countries. Previous studies have used data from Kickstarter to investigate various drivers of performance (Courtney et al., 2017; Kuppuswamy and Bayus, 2017; Mollick, 2014). We analyze projects launched on Kickstarter since its inception and up to November 2016. We identify the campaigns launched by entrepreneurs in the 19 countries included in the GPR index while dropping non-serious crowdfunding efforts with project goals of less than $1,000 or greater than $1,000,000 (Butticè et al., 2017; Mollick, 2014; Skirnevskiy et al., 2017). Our final sample includes 1,672 fundraising attempts from the 19 developing countries listed in the GPR index.

3.2. Measures

3.2.1. Dependent variables

The goal of our analysis is to determine the effect of GPR on campaign performance and the moderating role of entrepreneur characteristics and campaign characteristics. Kickstarter uses an all-or-nothing funding mechanism, such that the campaign's funding goal must be met for the entrepreneur to receive financing. Therefore, performance can be measured by whether the campaign was successful in reaching its goal. Given this, our first dependent variable is *Success*, which takes the value of one if the campaign goal is met and zero otherwise (Mollick, 2014). As an alternative measure of campaign performance, we construct the variable *Backers*, which is a count of the total number of backers that the campaign has secured (Viotto da Cruz, 2018).

3.2.2. Independent variables

This study introduces country-level factors to the analysis of campaign performance in the crowdfunding context. Given that backers aid in financing the product development process, their decision to back a project could be contingent on the risk profile of the country of origin. We capture this risk with the variable *GPR*, as developed by Caldara and Iacoviello (2022). *GPR* is the most relevant construct for non-sophisticated investors, such as crowdfunding backers, because it can be gauged using easily accessible media such as news articles and public information. We then measure the interaction effects between *GPR* and five individual-level variables: *Narcissism*, *Gender*, *Project Goal*, *Successful Experience*, and *Unsuccessful Experience*. In Table 1 we list the countries included in our analysis, the average values for campaign performance by country (*Success* and *Backers*), the country's risk profile (*GPR*), and the economic development indicators (*GDP*, *Unemployment Rate*, and *Inflation Rate*).

3.2.3. Control variables

Since crowdfunding is a launching and financing alternative (Brown et al., 2017; Viotto da Cruz, 2018), we control for tree economic development indicators at the country level that are known to affect the ability of entrepreneurs to access financing and internationalize. These variables are the GDP, the unemployment rate, and the inflation rate of the entrepreneur's country. These variables are collected from the World Bank's world development indicators (WDI). To control for individual-specific effects, we introduce variables associated with crowdfunding performance. First, crowdfunding performance is known to be affected by the entrepreneur's personality traits. We control for the level of apparent narcissism by measuring the use of narcissistic rhetoric (Bollaert

Table 1
Country Means: Campaign Performance, Economic Development, and Risk Indicators.

Country		N	Success (in %)	Backers	GDP (in $ billion)	Unemployment Rate (%)	Inflation Rate (%)	GPR
(1)	Argentina	56	46.43	60.00	532	7.22	16.52	96.15
(2)	Brazil	141	31.21	69.60	2,280	7.66	6.97	98.50
(3)	China	155	41.29	93.14	9,040	4.09	2.88	100.17
(4)	Columbia	86	29.07	37.27	329	8.96	4.24	69.53
(5)	Hong Kong	78	28.21	89.28	298	3.34	3.63	97.42
(6)	India	40	45.00	44.60	1,800	2.65	9.21	71.02
(7)	Indonesia	74	45.95	46.92	895	4.41	5.55	61.33
(8)	Israel	155	32.90	100.37	289	6.08	0.92	90.49
(9)	Malaysia	16	50.00	53.88	300	3.21	2.09	102.78
(10)	Mexico	222	38.74	79.47	1,210	4.76	3.60	110.64
(11)	Philippines	75	28.00	73.19	272	3.36	2.47	121.71
(12)	Russia	78	28.21	63.08	1,800	5.47	9.29	130.53
(13)	Saudi Arabia	5	0.00	5.60	726	5.58	2.54	123.61
(14)	South Africa	138	36.23	97.12	355	24.97	5.32	81.48
(15)	South Korea	74	50.00	153.00	1,330	3.40	1.57	115.05
(16)	Thailand	95	31.58	39.76	400	0.60	1.52	104.28
(17)	Turkey	71	38.03	61.70	877	9.41	7.78	145.40
(18)	Ukraine	107	28.04	69.15	124	8.73	21.24	162.16
(19)	Venezuela	6	16.67	19.33	374	6.82	24.27	92.99

et al., 2020; Buttice and Rovelli, 2020). Second, campaigns launched by women are found to outperform those launched by men (Johnson et al., 2018). We control for the entrepreneur's gender using a dummy variable equal to one if the campaign is launched by a woman and zero otherwise. Third, campaigns with higher goals are less likely to be successful (Mollick, 2014). We control for project size with the variable *Project Goal* which equals the project's goal in U.S. dollars. Fourth, we use two variables to control for the entrepreneur's prior experience. *Successful Experience* and *Unsuccessful Experience* track the entrepreneur's previous outcomes on the platform. Finally, we include a set of variables that control for characteristics of the campaign content known to affect campaign performance (Courtney et al., 2017). *Video Pitch* is a dummy variable that takes the value of one if the campaign has a video pitch and zero otherwise. *Video Count* captures the number of videos included in the campaign's description section. *Image Count* captures the number of images included in the campaign's description section. *Word Count* measures the textual length of the campaign's content section. And *Duration* is the number of days that the entrepreneur sets in advance for the campaign to be open to the public. Due to the skewness of the variables and the zero values encountered, all continuous variables were standardized. All variables and their descriptions are summarized in Table 2.

3.3. Methods

We aim to identify the effects of GPR on crowdfunding campaign performance, considering its main effect and the effects of its interaction with several individual-level variables. First, due to the dichotomous nature of the dependent variable *Success*, we use a logistic regression model (Hsieh and Vu, 2021). We regress the individual-level variables on *Success* without country-level variables. We then include the country-level variables *GDP*, *Unemployment Rate*, and *Inflation Rate*. Then, we include the variable *GPR* to test the main effects of country-level risk on campaign performance. Finally, we test the interaction effects by including the variables *GPR* × *Narcissism*, *GPR* × *Gender*, *GPR* × *Project Goal*, *GPR* × *Successful Experience*, and *GPR* × *Unsuccessful Experience* in separate models. Second, since the alternate dependent variable *Backers* is not a dummy variable, we repeat the process using ordinary least squares regression. In all models, we use robust standard errors clustered at the country level.

4. Results

4.1. Descriptive statistics

In Table 3, we present the descriptive statistics of fundraising attempts from our sample. We note that 35.6% of campaigns successfully reached their funding goal and the average number of backers per campaign was 76.5. In terms of narcissistic rhetoric, we note that, on average, 42% of first-person pronouns were singular first-person pronouns. Women account for 31.6% of the campaigns launched in the countries of interest, highlighting the presence of the gender gap in crowdfunding (Kuppuswamy and Mollick, 2016). The average project size was $20,212. As for prior crowdfunding experience, on average, the entrepreneurs in our sample had no prior fundraising experience on Kickstarter. Most entrepreneurs (78%) had a video pitch accompanying their campaign. Besides the video pitch, the average campaign had no videos embedded in the campaign content section but had five images. The average duration of the campaigns in our sample was 36 days.

In Table 4, we present the difference in means between successful and unsuccessful campaigns. As expected, we find that successful projects are more likely to be located in countries with lower levels of GPR. We do not note any other significant differences in terms of the country control variables. As for individual-level characteristics, we find evidence that the likelihood of success is increased when less narcissistic rhetoric is used (Bollaert et al., 2020; Buttice and Rovelli, 2020), when the entrepreneur is a woman (Johnson et al., 2018), when a lower goal is set (Mollick, 2014), when the entrepreneur has prior crowdfunding success (Butticè et al., 2017), when more visual and textual content is provided (Courtney et al., 2017), and when the campaign duration is shorter (Kraus et al., 2016). Since these findings corroborate those of previous studies, the drivers of crowdfunding success in developing countries seem to be in line with those for campaigns launched in the United States and OECD countries.

Before proceeding to our main analysis, we conduct a correlation and variance inflation factors (VIFs) check. In Table 5, we present the correlation matrix with the VIFs for the variables included in our analysis. The unconditional correlations of the variables in our analysis are not alarming with the highest correlation being between unemployment and inflation ($\rho = 0.392$). Moreover, the highest VIF is 1.60 which is well below the established thresholds for concern (Hair et al., 2010; McDonald and Moffitt, 1980).[1] Thus, multicollinearity issues are not a significant concern in our analysis.

4.2. The effects of geopolitical risk on entrepreneur fundraising performance

In Table 6, we begin our analysis of the association between the macro-environmental context and entrepreneurial fundraising performance, considering campaign fundraising success as the measure of performance. The eight models presented in Table 6 use logistic regression and control for category and country fixed effects. Column (1) presents the estimated effects of entrepreneur characteristics and campaign characteristics on success. Aligned with prior literature, we find evidence that campaigns are more likely to succeed when less narcissistic rhetoric is used (Bollaert et al., 2020; Buttice and Rovelli, 2020), when the entrepreneur is a woman

[1] We run the VIF scores for all models with interaction terms and the maximum VIF score is 1.61 for these models as well which is well below the established thresholds for concern.

Table 2
Variable Description.

Variable	Description	Sources
Dependent Variable		
Success	A dummy variable = 1 if crowdfunding campaign is successful	Kickstarter
Backers	Number of backers pledging to the campaign	Kickstarter
Independent Variables		
Country-level:		
GPR	The geopolitical risk index score of where the entrepreneur is located.	Caldara and Iacoviello (2022)
GDP	The gross domestic product (in $) of where the entrepreneur is located.	WDI
Unemployment Rate	The unemployment rate (in%) of where the entrepreneur is located.	WDI
Inflation Rate	The inflation rate (in %) of where the entrepreneur is located.	WDI
Individual-level:		
Narcissism	Ratio of first-person singular pronouns to total first-person pronouns.	Kickstarter
Gender	A dummy variable = 1 if the entrepreneur is a woman.	Kickstarter
Project Goal	The campaign's fundraising goal in dollars.	
Successful Experience	The number of previous successful fundraising attempts on the crowdfunding platform.	Kickstarter
Unsuccessful Experience	The number of previous unsuccessful fundraising attempts on the crowdfunding platform.	Kickstarter
Video Pitch	A dummy variable = 1 if current campaign has a video pitch.	Kickstarter
Video Count	The number of videos in a campaign's content section.	Kickstarter
Image Count	The number of images in the campaign's content section.	Kickstarter
Word Count	The text length of the campaign's content section.	Kickstarter
Campaign Duration	The number of days the fundraising campaign is public on the platform.	Kickstarter

Table 3
Descriptive Statistics.

Variable	Obs	Mean	Std.Dev.	Min	Max
Success	1,672	0.36	0.48	0	1
Backers	1,672	76.51	318.51	0	7,472
GPR	1,672	103.96	36.23	49.00	261.26
GDP (in billions)	1,672	1,607.55	2,496.62	91.03	10,438.53
Unemployment Rate	1,672	7.02	5.86	0.49	26.54
Inflation Rate	1,672	5.77	7.65	−0.90	48.70
Narcissism	1,672	0.42	0.42	0	1
Gender	1,672	0.32	0	0	1
Project Goal (in $)	1,672	20,212	48,960	1,000	700,000
Successful Experience	1,672	0.07	0.35	0	5
Unsuccessful Experience	1,672	0.09	0.36	0	7
Video Pitch	1,672	0.78	0.42	0	1
Video Count	1,672	0.26	0.89	0	10
Image Count	1,672	5.14	9.14	0	66
Word Count	1,672	532.53	497.03	0	5,547.02
Campaign Duration (in days)	1,672	35.82	13.46	2	92

Table 4
Difference in Means (Successful vs Unsuccessful Projects).

Variable	Successful	Unsuccessful	Two Tailed *t*-test
GPR	100.598	105.816	***
GDP (in billions)	1,740.21	1,534.07	
Unemployment Rate	6.900%	7.086%	
Inflation Rate	5.342%	6.006%	*
Narcissism	0.405	0.426	**
Gender	0.404	0.268	***
Project Goal (in $)	8,910	26,000	***
Successful Experience	0.121	0.040	***
Unsuccessful Experience	0.096	0.082	
Video Pitch	0.898	0.711	***
Video Count	0.372	0.200	***
Image Count	6.279	4.505	***
Word Count	632.58	477.11	***
Campaign Duration (in days)	33.64	37.02	***
N	596	1,076	

* p-value < 0.10.
** p-value < 0.05.
*** p-value < 0.01.

Table 5
Correlation Matrix and Variance Inflation Factors (VIFs).

Variables		(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	VIF
(1)	Success	1																DV
(2)	Backers	0.684*	1															DV
(3)	GPR	−0.071*	−0.064*	1														1.17
(4)	GDP	0.006	0.052*	0.009	1													1.22
(5)	Unemployment Rate	−0.015	−0.019	−0.084*	0.003	1												1.29
(6)	Inflation Rate	0.009	−0.006	0.247*	−0.362*	0.392*	1											1.60
(7)	Narcissism	−0.024	−0.161*	−0.017	−0.016	−0.040	−0.040	1										1.11
(8)	Gender	0.141*	0.100*	−0.041	−0.017	0.01	0.059*	0.066*	1									1.03
(9)	Project Goal	−0.269*	−0.008	−0.011	0.059*	0.028	−0.034	−0.218*	−0.110*	1								1.14
(10)	Successful Experience	0.128*	0.163*	0.063*	−0.052*	0.003	0.032	−0.079*	−0.041	−0.033	1							1.08
(11)	Unsuccessful Experience	0.029	0.039	0.036	0.019	−0.032	−0.025	−0.052*	−0.061*	−0.051*	0.215*	1						1.07
(12)	Video Pitch	0.215*	0.398*	−0.039	0.005	0.049*	0.082*	−0.161*	0.027	0.090*	0.071*	0.021	1					1.12
(13)	Video Count	0.105*	0.224*	−0.023	0.037	0.012	−0.017	−0.117*	−0.037	0.114*	0.049*	−0.003	0.102*	1				1.10
(14)	Image Count	0.125*	0.391*	0.098*	0.047	−0.016	0.001	−0.213*	−0.026	0.190*	0.156*	0.079*	0.258*	0.269*	1			1.31
(15)	Word Count	0.191*	0.277*	−0.059*	0.016	0.004	0.015	−0.045	0.070*	0.065*	0.013	−0.007	0.188*	0.165*	0.285*	1		1.13
(16)	Campaign Duration	−0.125*	−0.045	−0.025	−0.021	−0.022	0.008	−0.072*	−0.009	0.181*	0.005	0.036	−0.008	−0.005	−0.022	−0.003	1	1.05

Table 6
Logistic Regression Model.

	Dependent Variable: Success							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.
GPR × Narcissism				0.1383**				
				(0.0686)				
GPR × Gender					0.0665			
					(0.1185)			
GPR × Project Goal						0.2179**		
						(0.0944)		
GPR × Successful Experience							0.0252	
							(0.0412)	
GPR × Unsuccessful Experience								−0.0273
								(0.0560)
GPR			−0.2400***	−0.2302**	−0.2602**	−0.1722*	−0.2477**	−0.2387**
			(0.0927)	(0.0936)	(0.1105)	(0.0942)	(0.0978)	(0.0933)
GDP		0.8559	0.5380	0.5263	0.5561	0.4916	0.5374	0.5373
		(0.6131)	(0.5387)	(0.5492)	(0.5449)	(0.5359)	(0.5360)	(0.5391)
Unemployment		−0.3087	−0.3093	−0.3134	−0.3083	−0.3260	−0.3050	−0.2999
		(0.5428)	(0.5287)	(0.5099)	(0.5273)	(0.5325)	(0.5267)	(0.5159)
Inflation		0.0762	0.1547	0.1798	0.1557	0.1513	0.1531	0.1543
		(0.1439)	(0.1332)	(0.1292)	(0.1337)	(0.1364)	(0.1329)	(0.1336)
Narcissism	−0.1545*	−0.1565*	−0.1516*	−0.1396*	−0.1511*	−0.1475*	−0.1518*	−0.1504*
	(0.0800)	(0.0818)	(0.0825)	(0.0734)	(0.0828)	(0.0829)	(0.0826)	(0.0836)
Gender	0.5135***	0.5261***	0.5290***	0.5355***	0.5346***	0.5342***	0.5303***	0.5280***
	(0.1154)	(0.1145)	(0.1153)	(0.1174)	(0.1142)	(0.1150)	(0.1135)	(0.1162)
Project Goal	−0.9196***	−0.9292***	−0.9296***	−0.9326***	−0.9301***	−0.9404***	−0.9297***	−0.9312***
	(0.0667)	(0.0683)	(0.0688)	(0.0687)	(0.0696)	(0.0697)	(0.0688)	(0.0696)
Successful Experience	0.2612***	0.2645***	0.2702***	0.2753***	0.2720***	0.2673***	0.2619***	0.2703***
	(0.0886)	(0.0905)	(0.0909)	(0.0927)	(0.0915)	(0.0920)	(0.0966)	(0.0917)
Unsuccessful Experience	−0.0207	−0.0256	−0.0250	−0.0297	−0.0248	−0.0199	−0.0237	−0.0232
	(0.0539)	(0.0531)	(0.0530)	(0.0516)	(0.0527)	(0.0533)	(0.0550)	(0.0565)
Video Pitch	1.2618***	1.2525***	1.2403***	1.2514***	1.2405***	1.2739***	1.2383***	1.2425***
	(0.1393)	(0.1371)	(0.1410)	(0.1424)	(0.1411)	(0.1379)	(0.1408)	(0.1426)
Video Count	0.2008***	0.1979***	0.1982***	0.1906***	0.1979***	0.2109***	0.1997***	0.1981***
	(0.0627)	(0.0628)	(0.0620)	(0.0637)	(0.0619)	(0.0672)	(0.0623)	(0.0619)
Image Count	0.2318***	0.2288***	0.2606***	0.2692***	0.2596***	0.2628***	0.2604***	0.2609***
	(0.0801)	(0.0819)	(0.0881)	(0.0903)	(0.0884)	(0.0876)	(0.0879)	(0.0878)
Word Count	0.4972***	0.4813***	0.4630***	0.4656***	0.4634***	0.4690***	0.4653***	0.4632***
	(0.0835)	(0.0933)	(0.0909)	(0.0908)	(0.0913)	(0.0915)	(0.0891)	(0.0907)
Duration	−0.1820***	−0.1732***	−0.1872***	−0.1857***	−0.1869***	−0.1881***	−0.1888***	−0.1860***
	(0.0603)	(0.0589)	(0.0612)	(0.0611)	(0.0613)	(0.0613)	(0.0606)	(0.0617)
Constant	−2.8879***	−3.3289***	−3.3317***	−3.3775***	−3.3271***	−3.3508***	−3.3328***	−3.3336***
	(0.5692)	(0.6920)	(0.6314)	(0.6098)	(0.6240)	(0.6170)	(0.6362)	(0.6328)
Category Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Countries	19	19	19	19	19	19	19	19
N	1672	1672	1672	1672	1672	1672	1672	1672
Pseudo R^2	0.2106	0.2125	0.2151	0.2171	0.2152	0.2185	0.2153	0.2152

* p-value < 0.10.
** p-value < 0.05.
*** p-value < 0.01. Robust standard errors clustered at the country level are reported in parentheses.

(Davis et al., 2021), when the project goal is lower (Belleflamme et al., 2014; Cumming et al., 2019), and when the entrepreneur has successfully funded a crowdfunding campaign in the past (Lee and Chiravuri, 2019; Sewaid et al., 2021a). In terms of campaign content, our results support prior findings, showing a greater likelihood of success when video pitches are used, when more videos are included, when more images are included, when the campaign's content section is longer, and when the campaign duration is shorter (Anglin et al., 2018a; Calic and Mosakowski, 2016; J. Yang et al., 2020). In Column (2), we introduce our macro-level controls: *GDP*, *Unemployment*, and *Inflation*. We find no evidence that these variables affect the likelihood of crowdfunding success. In Column (3), we introduce the measure of our main variable of concern, *GPR*. We find evidence that GPR significantly reduces campaign success likelihood, supporting the validity of Hypothesis 1.

To test whether certain entrepreneur and campaign characteristics moderate the effects of GPR, we introduce the interaction terms between *GPR* and five variables: *Narcissism*, *Gender*, *Project Goal*, *Successful Experience*, and *Unsuccessful Experience*. In Column (4), we introduce the interaction term of narcissism and GPR. The results show that the use of narcissistic rhetoric moderates the adverse effects of GPR on campaign success despite the main effect of narcissistic rhetoric affecting campaign performance negatively. This serves as evidence supporting Hypothesis 2. To check the moderating role of gender, we test the interaction effect of *GPR* and *Gender* in Column (5). The interaction term does not have a significant effect on success likelihood. Therefore, we do not find evidence

supporting Hypothesis 3. We then test the moderating effect of *Project Goal* in Column (6). The results show evidence that larger project goals moderate the negative effect of GPR on performance, despite campaigns with larger goals underperforming generally. This provides support for Hypothesis 4. Finally, Columns (7) and (8) provide the results of the interaction between GPR and previous successful or unsuccessful campaigns. Neither of these interaction terms demonstrate evidence of a significant effect on success likelihood. Thus, Hypotheses 5a and 5b are not supported.

Given that interpretations of interaction terms are problematic (Ai and Norton, 2003), we plot the marginal effects of GPR for the significant interaction terms (*Narcissism* and *Project Goal*). In Fig. 1, we see that the marginal effect of GPR is significantly moderated by Narcissism. Similarly, in Fig. 2, we see that the effect of GPR is significantly moderated by project size.

In Table 7, we continue our analysis using the number of backers who supported a given campaign (*Backers*) as an alternate measure of campaign performance, using ordinary least squares regression. The models detailed in Columns (1) through (8) of Table 7 draw similar conclusions to those from Table 6 but with an alternate dependent variable. Column (1) reports the micro-level controls which capture the entrepreneur and campaign characteristics. These variables demonstrate statistically significant effects on performance (measured as the number of backers), similar to the results reported in Table 6, which corroborate the findings of prior studies. In column (2), we add our macro-level controls. Contrary to the results reported in Table 6, we find a significant positive association between *GDP* and the number of backers. As with Table 6, the variables *Unemployment*, and *Inflation* demonstrate no effect on performance. A possible explanation for the positive association between GDP and fundraising performance is that consumers are influenced by national stereotyping (Bannister and Saunders, 1978). Furthermore, business ventures from less developed economies face difficulties convincing their customers of the quality of their products (Chao, 1998), which is an important concern in reward-based crowdfunding (Mollick, 2014). In Column (3), we find a significant negative association between GPR and fundraising performance, validating Hypothesis 1.

Finally, Columns (4) through (8) report the interaction terms between *GPR* and entrepreneur and campaign characteristics. The results of the interaction term models from Table 7 are similar to those of Table 6. However, Column (7) indicates that prior successful campaign experience moderates the negative impact of GPR on fundraising performance. Thus, the analysis using the number of backers to measure crowdfunding performance demonstrates evidence supporting Hypothesis 5a.

4.3. Robustness checks

To further support our results, we conduct a battery of robustness checks. First, we run a multi-level logistic regression model (Autio et al., 2013). A multi-level logistic regression model acknowledges that entrepreneurs (*Level 1*) are nested within countries (*Level 2*). The model fits the data at different levels, such that the variation in the dependent variable is explained by the variation in both the individual-level (*Level 1*) and the country-level (*Level 2*) factors. This helps in understanding the joint effects of individual- and country-level factors on an entrepreneur's crowdfunding campaign performance. The results of the multi-level logistic regression model are in line with those presented in the main results section.

Second, given that countries are characterized by low or high levels of GPR, we rerun our main analysis using a median split. In our sample, China has a median level of GPR. Thus, countries with an average GPR above that of China are considered high GPR countries, while countries with an average GPR below that of China are considered low GPR countries. The results of the robustness check for the

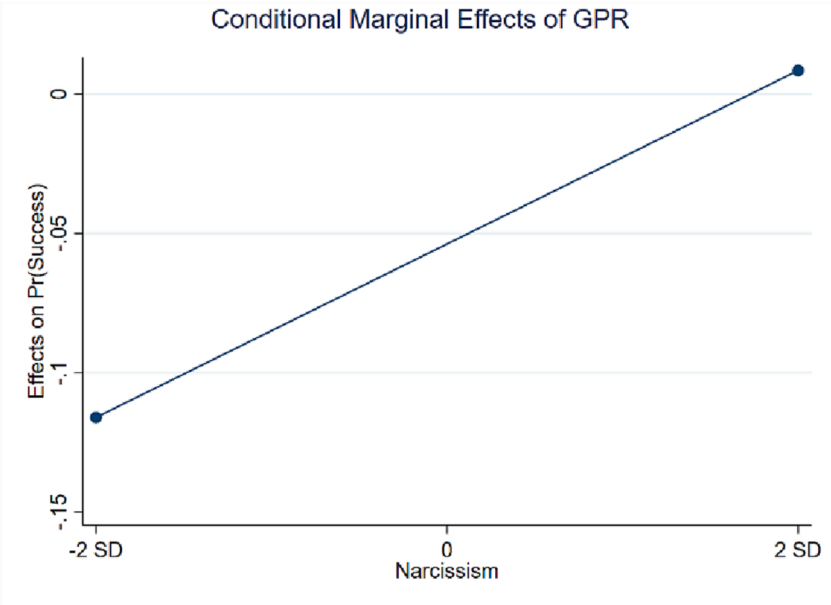

Fig. 1. Marginal Effects Plot: GPR and Narcissism.

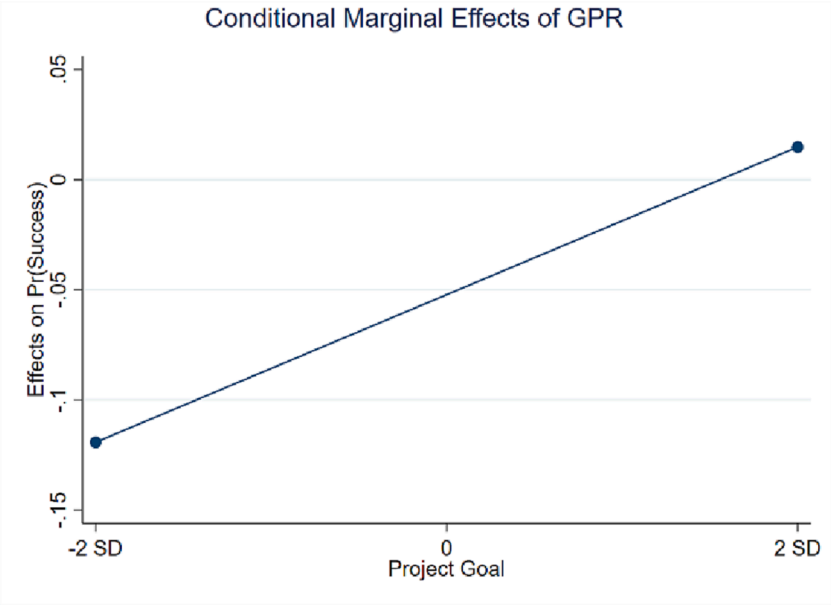

Fig. 2. Marginal Effects Plot: GPR and Project Goal.

two dependent variables (*Success* and *Backers*) are presented in Columns (1) through (4) of Table 8. We note that the adverse effect of GPR persists at both high and low levels of GPR.

Third, prior research that has looked at US-based campaigns argued a positive association between economic policy uncertainty (EPU) and crowdfunding performance (Hsieh and Vu, 2021). To control for any possible effects that economic policy uncertainty might have, we merge our dataset with the EPU index. Both indexes are available for eight countries (Brazil, China, Colombia, Hong Kong, India, Mexico, Russia, South Korea). We run our main model while controlling for economic policy uncertainty (EPU). Our results shows that EPU is not significantly associated with the crowdfunding performance of international campaigns on US-based Kickstarter. Moreover, the adverse effect of GPR continues to hold after controlling for EPU. The results are reported in Columns (5) and (6) of Table 8.

Fourth, some countries in our analysis with a limited number of observations that could potentially bias our results. To this end, we focus on countries with higher levels of crowdfunding entrepreneurs, allowing for within-country variation. Specifically, we restrict our analysis to countries with more than 50 observations (dropping India, Malaysia, Saudi Arabia, and Venezuela) which leaves us with a sample of fifteen countries and 1,605 fundraising attempts. Repeating the main analysis this way leaves our results unchanged. Fifth, due to the high correlation between platform-specific human and social capital, we were unable to estimate models with both proxies. Thus, we replace our platform-specific human capital control (prior crowdfunding experience) with platform-specific social capital, following the methodology of Buttice et al. (2017). The results remain unchanged. Sixth, we repeat our original analysis using all fundraising attempts, serious and non-serious.[2] The original results hold. Finally, we control for possible biases due to outliers. First, we winsorize the non-dummy variables in our model at the 1st and 99th percentile. Then, we trim the data at the 1st and 99th percentile to remove the extreme values from the estimation model. The results remain unchanged in both cases.[3]

5. Discussion and conclusion

Crowdfunding platforms are effective at helping entrepreneurs obtain the financial resources needed to start and run their business ventures by removing many of the barriers of traditional financing channels. Moreover, crowdfunding allows entrepreneurs to develop, innovate, and expose their products to international markets. Much of the previous crowdfunding literature focuses on the role of entrepreneurial and campaign characteristics in determining campaign success. This leaves the macro-environmental factors that entrepreneurs face widely unexplored. By utilizing data from the biggest reward-based crowdfunding platform, Kickstarter, we focus on how GPR influences entrepreneurial fundraising performance. We find empirical evidence that GPR is negatively associated with campaign fundraising performance regardless of the quality of the entrepreneur or the campaign. This demonstrates evidence that backers consider GPR and its effect on reward delivery likelihood when deciding whether to back a project.

We go further, examining the moderating role of entrepreneur and campaign characteristics on the effect of GPR. In doing so, we

[2] In our original analysis, as with prior studies, we dropped observations not representing serious fundraising attempts (with goals below $1,000 or over $1,000,000).

[3] Results of additional robustness checks are available upon request.

Table 7
Ordinary Least Squares (OLS) Regression Model.

	Dependent Variable: Success							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.
GPR × Narcissism				0.0427**				
				(0.0200)				
GPR × Gender					−0.0327			
					(0.0292)			
GPR × Project Goal						0.0647		
						(0.0377)		
GPR × Successful Experience							0.0178**	
							(0.0080)	
GPR × Unsuccessful Experience								0.0306
								(0.0302)
GPR			−0.0831**	−0.0806*	−0.0746*	−0.0751*	−0.0869**	−0.0834**
			(0.0380)	(0.0386)	(0.0411)	(0.0402)	(0.0385)	(0.0379)
GDP		0.5847**	0.4734*	0.4638*	0.4659*	0.4553*	0.4721*	0.4690*
		(0.2544)	(0.2577)	(0.2585)	(0.2558)	(0.2563)	(0.2563)	(0.2559)
Unemployment		0.1699	0.1618	0.1648	0.1649	0.1491	0.1627	0.1544
		(0.2832)	(0.2880)	(0.2885)	(0.2887)	(0.2956)	(0.2857)	(0.2855)
Inflation		0.0563	0.0854*	0.0902*	0.0843	0.0846	0.0850*	0.0852*
		(0.0493)	(0.0484)	(0.0476)	(0.0491)	(0.0491)	(0.0482)	(0.0482)
Narcissism	−0.0792**	−0.0788**	−0.0767**	−0.0752**	−0.0768**	−0.0753**	−0.0769**	−0.0775**
	(0.0317)	(0.0329)	(0.0326)	(0.0306)	(0.0327)	(0.0322)	(0.0327)	(0.0325)
Gender	0.2008***	0.2077***	0.2077***	0.2089***	0.2067***	0.2078***	0.2089***	0.2084***
	(0.0446)	(0.0430)	(0.0423)	(0.0435)	(0.0407)	(0.0408)	(0.0411)	(0.0425)
Project Goal	−0.0959***	−0.0986***	−0.0965***	−0.0970***	−0.0965***	−0.0999***	−0.0963***	−0.0953***
	(0.0259)	(0.0257)	(0.0258)	(0.0255)	(0.0258)	(0.0238)	(0.0261)	(0.0258)
Successful Experience	0.0941***	0.0939***	0.0958***	0.0964***	0.0952***	0.0953***	0.0896***	0.0959***
	(0.0186)	(0.0186)	(0.0185)	(0.0189)	(0.0185)	(0.0191)	(0.0204)	(0.0180)
Unsuccessful Experience	−0.0198	−0.0219	−0.0218	−0.0227	−0.0219	−0.0206	−0.0209	−0.0257
	(0.0243)	(0.0237)	(0.0236)	(0.0231)	(0.0238)	(0.0235)	(0.0247)	(0.0235)
Video Pitch	0.6836***	0.6704***	0.6631***	0.6666***	0.6631***	0.6688***	0.6617***	0.6602***
	(0.0727)	(0.0722)	(0.0733)	(0.0729)	(0.0731)	(0.0746)	(0.0735)	(0.0736)
Video Count	0.1093***	0.1057***	0.1049***	0.1024***	0.1051***	0.1081***	0.1064***	0.1051***
	(0.0222)	(0.0224)	(0.0220)	(0.0225)	(0.0218)	(0.0224)	(0.0223)	(0.0220)
Image Count	0.2155***	0.2177***	0.2266***	0.2292***	0.2272***	0.2264***	0.2260***	0.2264***
	(0.0250)	(0.0282)	(0.0292)	(0.0297)	(0.0295)	(0.0293)	(0.0294)	(0.0291)
Word Count	0.1299***	0.1204***	0.1149***	0.1153***	0.1149***	0.1153***	0.1159***	0.1156***
	(0.0245)	(0.0284)	(0.0284)	(0.0285)	(0.0283)	(0.0282)	(0.0283)	(0.0285)
Duration	−0.0297	−0.0263	−0.0304	−0.0305	−0.0305	−0.0307	−0.0314	−0.0316
	(0.0188)	(0.0181)	(0.0186)	(0.0183)	(0.0185)	(0.0182)	(0.0187)	(0.0188)
Constant	−0.5069	1.3554*	0.9944	0.9840	0.9740	0.9405	0.9923	0.9799
	(0.3458)	(0.6990)	(0.7542)	(0.7455)	(0.7388)	(0.7459)	(0.7453)	(0.7457)
Category Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Countries	19	19	19	19	19	19	19	19
N	1672	1672	1672	1672	1672	1672	1672	1672
Adjusted R^2	0.3393	0.3438	0.3459	0.3472	0.3457	0.3490	0.3461	0.3462

Robust standard errors clustered at the country level are reported in parentheses.
* p-value < 0.10.
** p-value < 0.05.
*** p-value < 0.01.

analyze entrepreneur characteristics (narcissistic rhetoric, gender, previous successful/unsuccessful experience) and campaign characteristics (project goal). Our findings demonstrate evidence that the use of narcissistic rhetoric and setting larger project goals moderate the adverse impact of GPR. We posit that narcissistic entrepreneurs effectively portray their talent and link their project with themselves, demonstrating their active role in their ventures. In this way, narcissistic entrepreneurs are likely to be effective at quelling backers' concerns in contexts of increased risk, thereby moderating the negative effects of GPR. Similarly, we find evidence that larger project goals moderate the negative effect of GPR as well. Kickstarter works using an all-or-nothing funding mechanism whereby the entirety of the project's stated funding goal must be secured before any funds are transferred. We posit that this decreases hesitancy from backers who may otherwise worry about GPR affecting reward delivery, given that they will be a small part of a large pool of backers.

Initially, we do not find that the adverse GPR effects are moderated by the entrepreneurs' gender or their track record of success. However, when we include *Backers* as an alternate measure of entrepreneurial fundraising performance, we find evidence that the effects of GPR are moderated by prior crowdfunding success. Understandably, investors prefer less risky projects in a risky macro-environment. Entrepreneurs directly engage backers through reward-based crowdfunding, convincing them to purchase conceptual

Table 8
Robustness Check.

Dependent Variable:	Success		Backers		Success	Backers
	(1)	(2)	(3)	(4)	(5)	(6)
	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.	β / s.e.
EPU					0.1307	0.0329
					(0.1319)	(0.0705)
GPR	−0.3987***	−0.2898**	−0.1632**	−0.1029**	−0.0950**	−0.0641*
	(0.1418)	(0.1220)	(0.0676)	(0.0361)	(0.0463)	(0.0347)
GDP	0.5884	−0.8417	0.6120*	−0.0311	−0.1622	0.3437
	(0.6538)	(1.2451)	(0.3207)	(0.5714)	(0.4067)	(0.2270)
Unemployment	0.0920	0.1237	0.0837	0.0773	−0.6811	0.0490
	(0.2079)	(0.1699)	(0.1014)	(0.0498)	(0.5895)	(0.3127)
Inflation	−0.2265*	−0.0215	−0.0721	−0.0390	−0.4913	−0.1293
	(0.1365)	(0.1072)	(0.0440)	(0.0383)	(0.3755)	(0.1219)
Narcissism	0.5101***	0.4978***	0.2014***	0.1731**	−0.1817	−0.1040*
	(0.1795)	(0.1878)	(0.0547)	(0.0727)	(0.1290)	(0.0499)
Gender	−1.0345***	−0.8796***	−0.1264**	−0.0518*	0.5592***	0.2309***
	(0.0972)	(0.1091)	(0.0394)	(0.0275)	(0.1769)	(0.0626)
Project Goal	0.3517*	0.3110***	0.1046***	0.1101***	−0.8640***	−0.0948*
	(0.1938)	(0.0767)	(0.0275)	(0.0157)	(0.0798)	(0.0404)
Successful Experience	−0.1356	0.1197	−0.0818**	0.0291	0.2300	0.0910**
	(0.1145)	(0.0943)	(0.0295)	(0.0305)	(0.1518)	(0.0288)
Unsuccessful Experience	1.1948***	1.4105***	0.5751***	0.8118***	0.0073	−0.0226
	(0.2550)	(0.1858)	(0.0898)	(0.0998)	(0.0659)	(0.0258)
Video Pitch	0.2149**	0.1847*	0.1009***	0.1109*	1.3565***	0.6669***
	(0.0856)	(0.1049)	(0.0221)	(0.0497)	(0.1636)	(0.1181)
Video Count	0.2374	0.3379***	0.2608***	0.2131***	0.0761	0.0481*
	(0.1694)	(0.0468)	(0.0497)	(0.0264)	(0.0737)	(0.0229)
Image Count	0.4545***	0.4209**	0.1328***	0.0741	0.2723***	0.2389***
	(0.1249)	(0.1723)	(0.0294)	(0.0498)	(0.0382)	(0.0225)
Word Count	−0.2661***	−0.1556	−0.0519*	−0.0222	0.4591***	0.1480***
	(0.0731)	(0.1057)	(0.0225)	(0.0235)	(0.1269)	(0.0259)
Duration	−3.0213***	−2.8225***	2.3274**	−1.6506***	−0.1168	−0.0081
	(1.0726)	(0.9684)	(0.9687)	(0.3808)	(0.0791)	(0.0222)
Constant	−0.3987***	−0.2898**	−0.1632**	−0.1029**	−10.7365	−2.2860
	(0.1418)	(0.1220)	(0.0676)	(0.0361)	(8.5710)	(1.2317)
Category Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Low GPR	High GPR	Low GPR	High GPR	EPU Sample	EPU Sample
Number of Countries	9	9	9	9	8	8
N	774	743	774	743	874	874
Pseudo R^2/ R^2	0.2397	0.2378	0.3690	0.3414	0.2154	0.3497

Robust standard errors clustered at the country level are reported in parentheses.
* p-value < 0.10.
** p-value < 0.05.
*** p-value < 0.01.

future rewards before having the financial backing for reward development and production (Belleflamme et al., 2013; Rose et al., 2021). Backers must determine whether they are ready to invest in a reward given this uncertainty since the rewards will only materialize if the campaign is successful. Therefore, an entrepreneur's past performance may have a significant effect on the backers' investment decisions, especially in the context of GPR. Thus, a track record of success likely demonstrates the entrepreneur's talent and reduces potential uncertainty felt by backers, moderating the effects of GPR.

The limitations of our paper are best considered in the context of our contributions. We investigate the effect of a novel economic uncertainty index (the GPR index) on the performance of international crowdfunding campaigns launched on Kickstarter. Our analysis is limited to projects from 19 countries because the GPR index is only developed for those 19 countries. Future research could explore other forms of uncertainty and their effects on international crowdfunding efforts. Although our analysis focuses solely on the leading global reward-based crowdfunding platform (Kickstarter), there are numerous local crowdfunding platforms that entrepreneurs could turn to. Comparing the fundraising performance of projects launched via local vs international platforms given the local macro-environmental context could be a valuable extension to the current literature. Moreover, an understanding of local crowdfunding performance in light of economic uncertainty is still lacking.

Given the findings of our study, we draw several implications for policymakers, crowdfunding platforms, and entrepreneurs. Primarily, in response to the adverse effects of GPR, we suggest that developing countries sponsor entrepreneurs aiming to internationalize through crowdfunding platforms. This sponsorship would involve insurance provided by governments for the entrepreneurs which would reimburse backers in case of reward delivery failure. This insurance would be funded by sponsored entrepreneurs contributing a percentage of the capital they raise. Turning to Kickstarter, being a B-Corp (benefit corporation) with a social goal of "ending systemic inequality", there is much Kickstarter can do to improve the outcomes of entrepreneurial campaigns in developing

countries, especially those with geopolitical instability. Ultimately, they are the entity most in touch with the attributes of successful campaigns and reward quality signaling. Thus, as with our suggestions for policymakers, Kickstarter could educate entrepreneurs from developing countries on how to best signal to backers that their projects will not be derailed by issues related to GPR. This could be implemented via dedicated Kickstarter employees working one on one with entrepreneurs from developing countries. This would benefit entrepreneurs and aid in Kickstarter's B-corp mission, assisting entrepreneurs from developing countries to lessen inherent inequalities in access to entrepreneurial financing. Our study focuses solely on GPR's effect on crowdfunding performance; however, there are different proxies for economic uncertainty. Future research could investigate the effects of different forms of uncertainty on crowdfunding performance.

Author statement

The authors contributed equally.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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