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Abstract

This study advances the literature on entrepreneurial passion, which struggles to explain when and how the experience of passion impacts venture-level performance, by shifting the focus to the team level and investigating the mechanisms and contingencies underlying this relationship. Drawing on identity control theory and the literature on new venture life cycle stages, we theorize and empirically test that team entrepreneurial passion (TEP) affects new venture team performance via relationship conflict, and that this mechanism differs depending on whether the team's passion focus is aligned with the venture's development stage. Based on survey data and start-up competition scores from 86 new venture teams, we find that a prerequisite for a team to benefit from the experience of TEP, is that its passion focus at least reflects the entrepreneurial activities that external stakeholders deem appropriate for the specific development stage the venture operates in. Otherwise, these stakeholders will question the activities the team is passionate about, leading to adverse outcomes. Implications for research and practice are discussed.

Keywords	entrepreneurial passion; new venture teams; relationship conflict; team performance; new venture life cycle stages
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July 1st, 2019

Dear professor Cardon,

Thank you very much for giving us the opportunity to revise our manuscript and resubmit it to the Journal of Business Venturing.

We greatly appreciated your and the reviewers' insightful and constructive comments, and would like to sincerely thank you for summarizing all key points raised by the reviewers, and providing your own opinion. The reviewers' comments as well as your guidelines truly helped us to substantially improve the quality of our paper.

First, we fully agree with your assessment that the paper needed a better positioning in the entrepreneurial passion literature. As a result, we have extensively refined the introduction part, where we incorporated your suggestions with respect to the research gap.

Second, we have completely rewritten the theory section, and now provide a much more focused and detailed explanation of our hypothesized relationships. Thank you for the suggestion to focus our theory building more on the core variables of our model rather than on prior work on entrepreneurial passion. This helped us to write a more compelling and streamlined story. We are also grateful for the suggestion to use our exploratory qualitative data to inform our theorizing instead of introducing it in the discussion section. Special thanks for the suggestion to also look at the different types of team entrepreneurial passion (TEP). The paper now provides much more comprehensive insights into when and why a team better displays monofocal TEP versus polyfocal TEP. We strongly believe that these insights take the paper to a next level.

Third, we also carefully revised the method and results sections, and accounted for all reviewers' comments concerning sample, methods and additional analyses. We now for instance provide evidence that our study does not suffer from sample selection bias, nor from endogeneity. Besides, given that we now also theorize about the distinction between monofocal and polyfocal TEP, we are excited to complement our results with a polynomial multi-group mediation model with response surface analysis. That way, our paper does not only contribute to the literature in a theoretical way, but also from a methodological perspective.

We are convinced that the current version of the manuscript makes a much stronger contribution to the academic literature. We hope that our revision meets your expectations, and we look forward to receiving your and the reviewers' feedback on our work. Please find enclosed detailed responses to your comments as well as to those by the three reviewers.

Yours sincerely,

Sarah Boone

DOES TEAM ENTREPRENEURIAL PASSION MATTER FOR RELATIONSHIP CONFLICT AND TEAM PERFORMANCE? ON THE IMPORTANCE OF FIT BETWEEN PASSION FOCUS AND VENTURE DEVELOPMENT STAGE

RESPONSE TO REVIEWERS

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Response to Editor

Responses are written in blue.

We were fortunate to have three reviewers with significant and relevant knowledge and expertise for your article that provided high quality and timely reviews. The reviewers' comments were consistent with each other and with my own review of the article.

All reviewers saw potential in the paper. Reviewer 1 believes that " there is much to like about this paper... You do an admirable job of explaining the role of relationship conflict in this process. I also applaud your data gathering. The fact that you gathered data from both teams and from external judges for performance is a definite strength of this paper." Reviewer 2 also says you address "an interesting question in the new venture team entrepreneurial passion (TEP) research – how does TEP influence team performance and the contextual boundaries of the working mechanism." Reviewer 3 concurs with you that there is a "need to identify the mechanisms and conditions underlying the relationship between TEP and performance."

In general, the reviewers and I agree that there is a strong potential contribution here given how little we know concerning how passion works in teams. That said, there are underexplored areas such as your qualitative data, and different configurations of TEP in your teams (poly-focal, mono-focal, etc.), and some of your theoretical arguments are underdeveloped at present.

Given the strong agreement within the review team that you may be able to build on the contribution and clarify the theoretical and empirical contributions through a major revision, I have decided to ask you to **revise and resubmit** your article for a continuation of the review process. The reviewers have provided you considerable detail on their concerns and suggestions for how those concerns can be alleviated. Furthermore, there do not appear to be any major inconsistencies across reviewers. If you can address their concerns well, then I think the quality of the manuscript will be substantially improved.

Thank you for your positive assessment of our manuscript. We have revised our manuscript substantially in order to address the comments raised by yourself and the reviewers, as we will explain in detail below.

While I do not wish to repeat the reviewers' comments here, as they make many excellent points that you need to consider, in the interest of helping to guide your efforts I note that the main issues with the paper are as follows:

Comment 1.1. Contributions. While every member of your review team finds a valuable potential contribution in your paper, as Reviewer 1 notes (point 2), "the introduction could be more compelling.... you're missing a chance to get the reader excited about your study, which introduces one of the first attempts at disentangling the mechanisms by which TEP influences firm performance." This reviewer offers a number of suggestions you might consider to strengthen your discussion of why this study is so important to advancing our understanding of passion in teams. Reviewer 3 similarly offers suggestions for you to bring out the potential contributions of your work. In particular, examining the type of TEP the teams in your study have (R3, comment 8) seems highly relevant given recent published work on TEP and team

performance (Santos & Cardon, in press). Perhaps more importantly, you need to be able to explain why the study you conduct is novel and necessary, beyond what we already know about passion at the individual level of analysis, and what we already know about passion at the team level of analysis.

We have rewritten the introduction section in order to explain more clearly why our study is important, why it is novel and necessary, and which contributions it makes. In particular, we now explain that the field encounters difficulties to identify how entrepreneurial passion impacts venture-level outcomes such as performance, and that in order to better understand the drivers of new venture performance, we ought to examine motivations, cognitions, and behavior at the team level, because many new ventures are founded and managed by a team rather than by a solo entrepreneur. We further explain that extant research finds mixed results for the link between TEP and performance, and that we therefore need to identify important mechanisms and contingencies underlying this relationship.

We have also rewritten the discussion section of our paper along these lines.

Comment 1.2. It is also essential that your discussion of the intended contributions is an accurate reflection of your study. As Reviewer 3 points out (comment 3.2) you do not measure how TEP changes over time, so you do not actually study the temporal nature of TEP. Instead you "compare TEP in new venture teams in two different stages of the process: conception stage (early stage) and commercialization stage (a bit further down the road). This is not much about the temporal nature of TEP (as the teams are not measured in different time moments or over time – this is a suggestion the authors raise for future research) but is more about the contextual nature of TEP depending on the stage of the venture." This is still a potentially valuable contribution to the literature, but needs to be revised to match the actual nature of the data you have, both in the introduction and discussion sections of your manuscript.

Thank you for pointing this out. We have carefully checked the paper and have rewritten all sections that were falsely hinting at the temporal nature of our research.

Comment 2.1. Theoretical development. (A) All three of the reviewers would like to see a more focused and detailed explanation of your hypothesized relationships (see Reviewer 1, points 3 and 4). (B) Reviewer 2 also points out the need for more detailed explanation of why TEP would have a main effect reduction on relationship conflict, rather than a moderating effect (point 1), (C) as well as why you do not test the main effects of diversity and TEP on team performance (point 2). (D) Given that prior research has examined the direct effects of different types of TEP on team performance (Santos & Cardon, in press), readers need to understand why your approach does not test this effect prior to proposing the moderating mechanism of relationship conflict. (E) I caution you, however, to heed the advice of Reviewer 3 (points 4 and 5) to ensure that you are building a theoretical story that focuses on your core variables and the relationships between them, rather than providing a detailed literature review of tangential areas of research (e.g. Vallerand's DMP model) that do not help inform your particular focus and study. I recognize that it is difficult to establish your novel theorizing without repeating

prior foundational arguments (R3, point 5), yet I concur with R3 that this "can be significantly reduced" in length. The goal is to reduce the repetitiveness of your manuscript so you can tell a more compelling story of your novel insights and evidence.

- (A) We have drastically rewritten the theory section, and now provide a much more focused and detailed explanation of our hypothesized relationships.
- (B) As pointed out by Reviewer 2, the previous version of our manuscript contained a sentence mentioning that "TEP...has the potential to reduce relationship conflict...". Even though we think this is something different than saying that "TEP has the potential to reduce the effect of relationship conflict on team performance", we understand that our initial formulation may have raised doubts and misinterpretations. We have carefully proofread our current manuscript in order to avoid misleading sentences that may falsely give the impression that we are investigating a moderating effect of TEP.
- (C) As in the first version of our manuscript, we test the effect of passion diversity in an additional analysis. However, we have decided not to include passion diversity in our theorizing. We agree that there is value in investigating the link between (diversity in) individually experienced passions and the emergence of TEP, as advanced in the theoretical model in your 2017 AMR article. However, we think that our understanding of this bottomup process can only be advanced by a fine-grained investigation of the affective and identity processes that precede the experience of TEP. As you asked us to focus our theoretical development section more, we have decided not to include this part of the theoretical model. Although we regard these bottom-up processes as a very interesting topic for future research, we believe that incorporating them would harm the focus of the study and compromise the level of detail required to advance the field. In short, we have decided to focus on the link between team entrepreneurial passion, relationship conflict and performance, which enables us to provide the necessary theoretical substance as well as empirical rigor in order to advance our understanding of the link between TEP and team outcomes. In our discussion section, we mention the link between individually experienced passions and the emergence of TEP as an interesting avenue for future research.
- (D) Please allow us to explain why we do not theorize about the overall effect of TEP on team performance, nor on the remaining direct effect of TEP on team performance which does not go through relationship conflict.

As we explain in the revised version of the introduction section, prior work finds somewhat puzzling results regarding the (overall) effect of TEP on team performance (Santos & Cardon, 2018). We then explain that, in order to provide a more in-depth explanation about the importance of TEP for venture performance, it is important to investigate the mechanisms and contingencies underlying the TEP – performance relationship. We hope that this positioning helps the reader understand why we do not theorize about the overall effect of TEP on team performance, but instead focus on the mediators and moderators underlying this relationship.

Moreover, we are no longer convinced that there exists something like a 'general' overall effect of TEP (via relationship conflict) on team performance. Instead, we now theorize

that the effect of TEP (for a given entrepreneurial role) on performance via relationship conflict is very different in the conception stage versus the commercialization stage as a result of different goals and stakeholder expectations.

We further decided not to include hypotheses about the direct effects of TEP on team performance, because this would not bring a lot of additional novel insights compared to what we now already convey in our manuscript, while it would unnecessarily lengthen the paper. As explained in the revised version of the paper, we did include the direct effects in our linear multi-group mediation model, however, and ran several robustness tests to compare models that include versus exclude the direct effects. All models return the same conclusions, and partial mediation models return insignificant direct effects of TEP on team performance. We believe these results confirm our decision not to focus on these direct effects.

(E) Thank you for pointing this out. In line with your suggestions and those of the reviewers, we have streamlined the argumentation underlying our hypotheses by removing references to literature that is not crucial for this argumentation, such as the work by Vallerand and colleagues.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Santos, S. C., & Cardon, M. S. (2018). What's Love Got to Do With it? Team Entrepreneurial Passion and Performance in New Venture Teams. Entrepreneurship Theory and Practice, 1042258718812185.

Comment 2.2. All of the reviewers also bring up issues of causality and the ordering among variables in your model. Given that several different causal ordering and relationships among your variables could be possible, I encourage you to spend more manuscript space developing the ideas about why this ordering makes the most sense. For example, R3 (point 6.3) wonders if TEP might mediate between relationship conflict and performance. Why would TEP reduce RC rather than moderate the effect of RC? Why would TEP come about prior to RC? Can TEP develop when there is RC within a team? Would venture stage also moderate the relationship between RC and performance? Why or why not? All of the reviewers raise interesting questions for you to consider in this regard. While you ultimately must decide which alternative models to explore, the key is for you to explain and develop your theoretical ideas in more depth, as well as to remove questions about other potential models among your key variables.

Although performance was measured at a later point in time, and via a different source, than TEP (for inventing and founding) and relationship conflict, we agree that there is a chance that our model is subject to feedback loops. We follow the theorizing from your 2017 AMR paper, where you argue that TEP influences the quality of team processes and team performance. Yet, as you also explain in that same article, it can indeed be expected that the process of emergence and consequences of TEP is subject to feedback loops. This means

that team processes and performance may, *over time*, influence individuals' experience of passion via top-down affective and identity processes, and the diversity of these individual-level passions may in turn influence TEP via bottom-up affective and identity processes.

As such, we believe that we should not rule out the theoretical possibility of feedback loops. Instead, we should be careful and test whether the results of our models are biased by potential endogeneity. In order to alleviate these concerns, we applied the Model Implied Instrumental Variable, Two Stage Least Squares (MIIV-2SLS) estimator (Bollen, 2018). The technique tests whether a model is subject to misspecifications, allowing us to apply a two-stage model on multiple equations simultaneously. We find insignificant Sargan test statistics, and model results that are fully in line with the findings of our reported models. This suggests that our results are not substantially affected by endogeneity. We now report this analysis in the robustness checks.

That being said, we are very supportive of future research endeavors with a longitudinal design that include feedback loops and that investigate how all constructs in the theoretical model influence each other over time. We reflect on these possibilities for future research in our discussion section.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Bollen, K. A. (2018). Model Implied Instrumental Variables (MIIVs): An Alternative Orientation to Structural Equation Modeling. Multivariate behavioral research, 1-16.

Comment 2.3. The final point of theoretical development is concerning the type of TEP teams in your study experience. Please see Reviewer 3 comments 8 and 18, as I concur that this is an overlooked aspect of your study that needs further attention. Given your attention on relationship conflict as a key mediator, it seems highly relevant whether teams experience singular mono-focal TEP or poly-focal TEP, and how those types of TEP are related to RC and ultimate team performance. While you are free to disagree with that perspective, you need to at least explain why the type of TEP would not be relevant to RC in your study.

Thank you for encouraging us to investigate monofocal versus polyfocal TEP more indepth. We have rewritten the theory section and conducted additional analyses in order to take this comment into account.

In particular, we now build on identity control theory and literature on new venture life cycle stages to theorize that teams in the conception stage will benefit more from monofocal TEP for inventing than from polyfocal TEP for inventing and founding, which in turn is better than monofocal TEP for founding. We further argue that teams in the commercialization stage will benefit more from polyfocal TEP for inventing and founding compared to monofocal TEP for one of both roles. For more details, we gladly refer to our manuscript.

In order to test these hypotheses, we complement our linear multi-group mediation model with a polynomial multi-group mediation model with response surface analysis. The latter technique is particularly relevant if one wants to study how the combination of two predictors relate to a certain outcome (Edwards & Parry, 1993; Shanock et al., 2010). The response surface plots that are now included in the paper allow us to visually show how combinations of TEP for inventing and TEP for founding - and in particular monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP - are related to relationship conflict and team performance. We believe these analyses and the corresponding findings allow us to make a clear and strong contribution to the existing literature.

References:

Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggestad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining moderation and overcoming limitations of difference scores. Journal of Business and Psychology, 25(4), 543-554.

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. Academy of Management journal, 36(6), 1577-1613.

Comment 3. Methodological clarity. (A) Reviewer 1 (points 5-8) and Reviewer 3 (points 9 and 10) request more explanation and information concerning some of the methodological choices you are making and details of the study. Reviewer 2 proposes several additional tests that would be helpful, such as exploring whether there is a moderating effect of the stage of development of the team (comment 6). (B) Reviewers 2 and 3 wonder whether you might use your qualitative data to inform your theorizing or the quantitative study, rather than waiting until the discussion to incorporate the qualitative information. While this is up to you, it does seem to me that the "qualitative data is undervalued as it is now" (R3, point 10). (C) I also concur with Reviewer 3 that you should provide more robust evidence that sample selection (comment 11) and endogeneity (comment 12) are not serious problems with your data. This reviewer refers to articles that should help you address this.

- (A) We were able to take all these comments into account, and gladly refer to our replies to the comments in question (R1: 5 8, R2: 6, R3: 9-10):
 - We now mention in the "data" section that, on average, respondents filled out the survey 24 days before the jury assessments were made available on the online platform of the contest.
 - We have adjusted the section on robustness tests in order to avoid confusion regarding the results of multilevel structural equation model (MSEM) modeling.
 - As explained in our response to your comment 2.2. of this letter, we have addressed potential endogeneity issues through a MIIV-2SLS estimator.
 - We now use a different marker variable to address potential common method bias.

- In the "context" section of the paper, we now elaborate on the different incentives per track, and explain that the organizers redirected participants to the right track if needed.
- We now explain more in detail the jury assessment and the interrater reliability between the different judges.
- We have added more information on the distribution of the team performance measure.
- We now clarify that our measures of TEP and relationship conflict are in line with previous work.
- (B) Thank you for this suggestion. We now use our qualitative insights to inform our theorizing. In particular, we use two quotes to strengthen our reasoning about the effects of TEP for inventing and TEP for founding in the conception stage. We decided not to reuse the quotes from ventures in the commercialization stage, as these quotes pointed towards the clearer role divisions that were introduced in the teams. Whereas in the previous version of the paper, we argued that clearer role divisions made the experience of TEP less relevant, we now realize, after revisiting Cardon et al. (2017), that these role divisions are actually core to the experience of polyfocal TEP. When different team members are passionate about different entrepreneurial activities, and they understand that all these activities are important for the team as a whole, and thus perceive these passion foci as complementary, a polyfocal TEP may emerge.
- (C) We have conducted analyses that assure us that our results are not biased due to selection bias or endogeneity.

Selection bias: as we explain in our response to Reviewer 3, we are unable to run a Heckman selection model, because we do not have the necessary information from the broader population that would allow us to predict why a team decides to participate in the start-up competition or not. We are therefore unable to include a valid exclusion restriction, meaning that a Heckman selection model would not provide us with reliable estimates.

Nevertheless, a comparison between our sample and a database of 1,593 Swiss start-ups reassures us that the start-ups in our sample are representative for the broader population. For more details, we refer to our reply to comment 11 of Reviewer 3.

For the comments related to endogeneity, we refer to our response to your comment 2.2. of this letter.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Finally, if you choose to pursue a revision of this manuscript, please add a two-page executive summary (in addition to an abstract) at the front of the paper. Please be sure to carefully address all of the issues raised in the reviewers' comments.

We have added a two-page executive summary to our manuscript.

I look forward to receiving your revised manuscript.

Response to Reviewer 1

Responses are written in blue.

1. General comments. I sincerely appreciated the opportunity to read this paper. Entrepreneurial passion is a core research interest of mine. I think there is much to like about this paper. There is a paucity of work examining team entrepreneurial passion (TEP), and especially, what might explain the lack of significant findings concerning relationships between TEP and performance. You do an admirable job of explaining the role of relationship conflict in this process. I also applaud your data gathering. The fact that you gathered data from both teams and from external judges for performance is a definite strength of this paper. While I think this is a very interesting paper, I still have some concerns and questions which I outline in greater detail below.

Thank you for your positive assessment of our manuscript. We have revised our manuscript substantially in order to address the comments you raised, as we will explain in detail below.

Comment 2. Introduction. While I really like your study, I also think your introduction could be more compelling. In particular, the first paragraph sounds more like an abstract than an attempt to "hook" the reader. This is problematic because 1) it makes your introduction sound somewhat redundant after reading the abstract, but more importantly, 2) I feel as though you're missing a chance to get the reader excited about your study, which introduces one of the first attempts at disentangling the mechanisms by which TEP influences firm performance. The introduction is not terrible, but it could be better because it does not emphasize "why" the reader should care about this study. You might work harder at detailing how the extant literature struggles to explain the mechanisms through which passion actually does (or curiously, does not) link to firm performance. You might also spend more time talking about the importance of relationship conflict, and how this construct has been overlooked in passion literature, which is surprising given its importance in team literature. Also, you might reference the article by Grant and Pollock (2011) about the art of "setting the hook" in introductions for guidance in how to make your introduction more compelling.

a. As another suggestion, it might help to emphasize the importance of relationship conflict in the introduction. Right now, this construct is not highlighted that much, and it's a key variable in your study (you could probably move some of the text from your theory section forward to the introduction on this point, given that you emphasize the importance of it when you argue H1).

Thank you for your constructive suggestions on how to improve our introduction section. We always find it challenging to write a clear and compelling introduction, so we were glad to have these suggestions as a starting point for enhancing the section. We have now rewritten the introduction section in order to explain more clearly why our study is important, why it is novel and necessary, and which contributions it makes. In particular, we now first explain why it is important for the field to investigate passion at the team level. We then explain that existing research has reported puzzling findings with respect to the relationship between TEP and team performance, and that we therefore need to understand

the mechanisms underlying this relationship. We also took your suggestion into account to put more emphasis on the importance of relationship conflict as mediating variable, and are convinced that we now provide a better positioning to introduce this variable into the entrepreneurial passion literature.

Comment 3. Theory. There is extant work that also looks at mediated relationships between passion and venture performance variables. For example, Baum, Locke and Smith (2001) and Baum and Locke (2004) analyze the relationships between passion for work and venture growth. It would be useful for you to cite work such as this, and point out that you help to expand the discussion surrounding why passion does not have a direct relationship with venture performance.

Thank you very much for pointing this out. For the positioning of the paper, we now rely on the articles you mention, as well as on Hmieleski & Baron (2008). These references help us strengthen our argument why we focus on the mediated relationship rather than the overall relationship between TEP and team performance.

References:

Hmieleski, K. M., & Baron, R. A. (2008). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. Strategic Entrepreneurship Journal, 2(4), 285-299.

Comment 4. Theory. (A) I agree with your general direction for H2a/b. However, I think you need to spend a little more time outlining the logic for this effect. In H1, you argue that TEP tends to promote greater familiarity and trust, which reduces relationship conflict (RC). But, for H2, you argue (p. 14) that venture team performance is dependent on TEP at a time when the related activities are relevant for the venture. (B) You do not hypothesize any direct relationships between TEP and venture performance in this study. (C) Moreover, you are not explaining why the stage matters for the relationship between RC and TEP (why it moderates this portion of the model). I think you can do more to explain why TEP for inventing or founding does more to reduce RC at specific points in time.

(A) Thank you for pointing us to the need to describe the mechanisms of our effects more indepth. We have drastically rewritten the theory section, and now explicitly base ourselves on identity control theory and the literature on new venture life cycle stages to provide a much more focused and detailed explanation of our hypothesized relationships. We now elaborate a lot more on why we expect to see a different effect of TEP on relationship conflict and performance depending on the venture's development stage, and argue this is due to self-verification processes that occur as a result of different stakeholder interactions.

In fact, we no longer hypothesize a general effect of TEP via relationship conflict on team performance, and then add a moderating effect of development stage. Instead, we develop our hypotheses separately per development stage, as we argue that the effect of TEP (for a

given entrepreneurial role) on relationship conflict and performance is very different in the conception stage versus the commercialization stage.

- (B) You observe correctly that we did not theorize about the overall effect of TEP on team performance, nor on the remaining direct effect of TEP on team performance which does not go through relationship conflict. Also in the revised version of the paper, we decided not to develop hypotheses for these overall and direct relationships, for the following reasons:
 - In the revised introduction section we now argue that, as prior work finds somewhat puzzling results regarding the (overall) effect of TEP on team performance (Santos & Cardon, 2018), an in-depth investigation of the mechanisms and contingencies underlying the TEP performance relationship is needed. We hope that this new positioning helps the reader understand why we do not theorize about the overall effect, but instead focus on the mediators and moderators underlying the relationship.
 - Moreover, we are no longer convinced that there exists something like a 'general' overall effect of TEP (via relationship conflict) on team performance. Instead, we now theorize that the effect of TEP (for a given entrepreneurial role) on performance via relationship conflict is very different in the conception stage versus the commercialization stage as a result of different goals and stakeholder expectations.
 - We further decided not to include hypotheses about the direct effects of TEP on team performance (which do not go via relationship conflict), because this would not bring a lot of additional novel insights compared to what we now already convey in our manuscript, while it would unnecessarily lengthen the paper. As explained in the revised version of the paper, we did include the direct effects in our linear multi-group mediation model, however, and ran several robustness tests to compare models that include versus exclude the direct effects. All models return the same conclusions, and partial mediation models return insignificant direct effects of TEP on team performance. We believe these results confirm our decision not to focus on these direct effects.
- (C) In the revised version of our manuscript, we now theorize that TEP for inventing and TEP for founding will affect RC differently depending on the venture's development stage. However, based on extant research, we see no theoretical reason to hypothesize that RC would affect performance differently depending on the development stage. We therefore decided not to elaborate on this in our theory section, and to focus our story on the self-verification processes. However, as we ourselves are very supportive of contextualized and nuanced research, we now report a multi-group mediation model that allows all relationships to differ between stages, rather than the first-stage moderated mediation model in the prior version the paper. Interestingly, while we find that RC has a negative effect on team performance in the commercialization stage, this effect does not hold in the conception stage. We decided to elaborate on this surprising finding in the discussion section.

References:

Santos, S. C., & Cardon, M. S. (2018). What's Love Got to Do With it? Team Entrepreneurial Passion and Performance in New Venture Teams. Entrepreneurship Theory and Practice, 1042258718812185.

Comment 4a. (A) On a separate note, you might have to explain why TEP for inventing would not carry over into the founding stage. For example, if members of a founding team build trust with one another in the conceptualization stage, wouldn't that carry over into the commercialization stage? (Meaning, wouldn't they already trust each other?) Thus, using a trust argument, if a positive relationship between TEP for inventing and RC exists in the conceptualization stage, I should also see the same effect in the commercialization stage. (B) This seems to indicate there is an asymmetry in the importance of passion. TEP for inventing would seem to be very important, but if it exists, TEP for founding is not. Can you explain this? Since you did not follow teams through the different stages, you might not be able to test for this. Alternatively, you could discuss this as a possibility for future research.

- (A) Thank you for these pertinent insights. In the theory section, we now elaborate a lot more on the venture development stages, and explain more in-depth the reasoning behind why TEP is expected to have a different impact on relationship conflict (and thereby also on team performance) depending on the development stage. We theorize that TEP for a specific entrepreneurial role will lead to decreased or increased relationship conflict depending on whether the team perceives that its passion for this role is validated by the external stakeholders it approaches. We further explain why we expect that teams will be able to benefit from the jointly experienced passion when stakeholders approve their passion focus, while teams whose passion focus is questioned are expected to engage in more relationship conflict. We decided not to elaborate on the possibility that effects may carry over from one stage to the other, because, as you mention, we did not follow teams through different stages. Instead, we advance it as an interesting avenue for future research, as you suggested.
- (B) Based on your comment, we decided to incorporate the "role importance asymmetry" more explicitly in the manuscript. By outlining the different stakeholder interactions per stage in the theory section, we now provide clearer theoretical clarifications of why passion for certain roles leads to stakeholder validation in certain development stages, but not in others.

Based on extant research, however, we could not argue why TEP for founding turns irrelevant when TEP for inventing is present in the conception stage. We therefore decided to elaborate on this finding in the discussion section. We believe this result may suggest that teams who are also passionate about inventing are better able to deal with stakeholders questioning their focus on founding activities in this stage, because their passion for inventing enables them to easily switch back to the activities that are deemed appropriate in this stage.

Comment 5. Method - Could you specify the time interval between when you collected the survey data from venture team members, and when the jury assessments of the teams' performance was done? Were these done at the same time, or did you collect the survey data before performance was assessed?

We now mention in the "data" section that, on average, respondents filled out the survey 24 days before the jury assessments were made available on the online platform of the contest.

Comment 6. Method - You mention in the robustness checks that you computed an MSEM of your full mediation model, but that the fit statistics were slightly worse (and the results were the same -p. 28). It would be nice to see the output for this model in an appendix, since it is a more robust modeling process than path analysis.

We reported a SEM model with parceled variables at the team level, because the multilevel structural equation model (MSEM) model unfortunately did not converge. We discussed this issue with two experts in structural equation modeling, and the non-convergence is most likely due to the small cluster sizes. MSEM is a great technique for multilevel modeling, but requires sufficiently large cluster sizes (Preacher, Zhang, & Zyphur, 2011 for instance recommend cluster sizes of at least 20). Given that founding teams typically only consist of a few members, it is hard to apply MSEM, so the SEM model with parceled variables serves as a good alternative.

In the prior version of the paper, we mentioned in the robustness checks that we conducted an MSEM with latent variables for the TEP and relationship conflict variables, but that this model did not converge (this sentence was followed by another analysis that provided slightly worse fit statistics than the reported model). We realize that it must have been confusing to read this in the section with robustness checks, and therefore have taken it out.

References:

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. Structural Equation Modeling, 18(2), 161-182.

Comment 7. Method - Reverse causality. I think you need to provide a little more justification for why poor venture performance might not be causing relationship conflict, which then reduces TEP. You mention this in the limitations section, but do not provide an explanation for why your proposed direction of relationships is correct.

Although performance was measured at a later point in time, and via a different source, than TEP (for inventing and founding) and relationship conflict, we agree that there is a chance that our model is subject to feedback loops. We follow the theorizing of Cardon et al. (2017), who argue that TEP influences the quality of team processes and team performance. Yet, as also explained in that same article, it can indeed be expected that the process of emergence and consequences of TEP is subject to feedback loops. This means that team processes and performance may, *over time*, influence individuals' experience of passion via top-down

affective and identity processes, and the diversity of these individual-level passions may in turn influence TEP via bottom-up affective and identity processes.

As such, we believe that we should not rule out the theoretical possibility of feedback loops. Instead, we should be careful and test whether the results of our models are biased by potential endogeneity. In order to alleviate these concerns, we applied the Model Implied Instrumental Variable, Two Stage Least Squares (MIIV-2SLS) estimator (Bollen, 2018). The technique tests whether a model is subject to misspecifications, allowing us to apply a two-stage model on multiple equations simultaneously. We find insignificant Sargan test statistics, and model results that are fully in line with the findings of our reported models. This suggests that our results are not substantially affected by endogeneity. We now report this analysis in the robustness checks.

That being said, we are very supportive of future research endeavors with a longitudinal design that include feedback loops and that investigate how all constructs in the theoretical model influence each other over time. We reflect on these possibilities for future research in our discussion section.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Bollen, K. A. (2018). Model Implied Instrumental Variables (MIIVs): An Alternative Orientation to Structural Equation Modeling. Multivariate behavioral research, 1-16.

Comment 8. Method - Common method variance. I agree that the usage of separate sources for the DV and IV's is a strength of this study. However, I am slightly confused by your partial correlation analysis. According to Lindell and Whitney (2001), the marker variable should be uncorrelated with the variables of interest in the study. It seems reasonable that preferences concerning growth might be correlated to both the DV as well as passion and RC. Can you explain why this is an appropriate choice for a marker variable?

Thank you for pointing this out. Although we could not find any theoretical or empirical evidence that a team's average growth orientation would be related to TEP for inventing, TEP for founding, or relationship conflict, we understand that one may think that growth orientation relates to performance, and that average growth orientation may thus be a questionable marker variable (despite performance being measured from a different source).

We therefore decided to rerun our partial correlation analysis with a different marker variable, and adapted the section on "common method bias" accordingly. The new marker variable represents the extent to which team members on average envisioned their company to advance a societal cause. We consider this variable an appropriate marker variable, given that we did not find any evidence that this variable would be related to TEP for inventing, TEP for founding, relationship conflict, or team performance. The results of this new partial

correlation analysis are equally good as the one reported in the prior version of the paper, indicating that our analyses are not affected by a common method bias.

Comment 9. Discussion - I like the fact that you're attempting to explain the positive and negative (respectively) relationships between inventor and founder TEP and RC in the conception stage. However, the quote you provide about the ICO on p. 30 does not indicate founder passion. It indicates friction arising from an absence of income, and problems that arise from an idea that is not ready to be commercialized. Do you have any other quotes that show a team is passionate about founding a business, but are operating in the conception stage?

We understand that the quote, as it was included in the manuscript, raised this concern, because it mentioned that the team members had to get a side income to bridge the period before the ICO. However, we do not agree that the quote would not indicate founder passion, nor that the friction emerged because of the absence of income. We are convinced that this team displayed TEP for founding, because the co-founder mentioned that they "always wanted to push further and kind of start". The friction indeed emerged, as you suggest, because the team was already thinking about commercializing its product while there was no functioning prototype yet. In the theory section, we now explain a lot more indepth that this is in fact the core reason for why TEP for founding leads to higher relationship conflict in the conception stage. The team approached the investor because of the desire to launch the product. This investor, however, sees a mismatch between the team's focus on specific entrepreneurial activities (i.e. launch their offer via an ICO) and the development stage, because the team did not reach the objectives of the conception stage yet (i.e. their product requires further development). We are further convinced that the friction did not really arise because of the absence of income, because apart from these couple of words, the interviewee did not mention anything about financial issues, but focused on the interaction with investors. He for instance also mentioned:

"We reached out to people, we pitched our idea, and then they told us "yeah but you guys cannot tell us yet if that actually works with blockchain", it was just an assumption from us, and the prototype was not that far yet to prove to show people "hey by the way, this works, we have to do an ICO now." That was kind of the chicken and egg problem we had. We needed funding to do the ICO itself."

We decided not to include this abstract in the quote in the paper (which now – in line with a suggestion by the editor – appears in the theory section instead of the discussion section), because we feel it would unnecessarily lengthen the quote. We did decide to take out the sentence about the income, because this may otherwise confuse the reader.

Comment 10. Discussion - I think your argument about delineated roles and the reduced impact of passion may be plausible, but you need to bolster this argument (p. 31). Your entire model is built around the premise that TEP influences RC. However, RC is not mentioned explicitly in this section. I think you can strengthen this argument by talking about how delineated roles may work to reduce RC, thus rendering TEP as less potent (for that specific variable). It might

also be interesting to speculate about what other factors TEP might still influence in the commercialization stage as future research possibilities.

Whereas in the previous version of the paper, we argued that clearer role divisions made the experience of TEP less relevant, we now realize, after revisiting Cardon et al. (2017), that these role divisions are actually core to the experience of polyfocal TEP. When different team members are passionate about different entrepreneurial activities, and they understand that all these activities are important for the team as a whole, and thus perceive these passion foci as complementary, a polyfocal TEP may emerge.

Furthermore, we incorporated the comments by the editor and the two other reviewers to focus more on the effects of polyfocal versus monofocal TEP. The current version of the paper provides better explanations about why we expect (and find) different effects of monofocal versus polyfocal TEP depending on the venture's development stage. To that end, we have incorporated additional analyses in the paper that allow us to study the effects of combinations of TEP for inventing and TEP for founding. In particular, we have complemented our linear multi-group mediation model with additional analyses using polynomial multi-group mediation with response surface analysis. The latter technique is particularly relevant if one wants to study how the combination of two predictors relate to a certain outcome (Edwards & Parry, 1993; Shanock et al., 2010). The response surface plots that are now included in the paper allow us to visually show how combinations of TEP for inventing, monofocal TEP for founding – and in particular monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP – are related to relationship conflict and team performance.

Whereas our linear model finds no significant effects of TEP for inventing and TEP for founding on RC (and team performance) in the commercialization stage, the polynomial model and response surface plots show that a combination of high TEP for inventing and high TEP for founding (i.e. a polyfocal TEP) does matter for reducing relationship conflict (and hence increasing team performance) in the commercialization stage.

As such, we no longer conclude that clearer role divisions turn TEP less relevant in the commercialization stage. Instead, based on the polynomial model, we conclude that polyfocal TEP inventing and founding is better for reducing relationship conflict and enhancing performance than monofocal TEP for either inventing or founding.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. Academy of Management journal, 36(6), 1577-1613.

Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggestad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining

moderation and overcoming limitations of difference scores. Journal of Business and Psychology, 25(4), 543-554.

Comment 11. Discussion - You might bolster your applications for practitioners section by talking briefly about how your study impacts venture investors, and their decision-making processes and coaching of entrepreneurial teams.

We now elaborate more on the practical implications for new venture teams, but also for grant suppliers, start-up support initiatives, and investors. We for instance explain that our findings help these external actors to foster constructive dynamics and enhance performance in their portfolio companies by stimulating the appropriate kind of team passion for the stage the venture is operating in. It is important for these external actors to know that their feedback impacts team dynamics. When a team's passion focus is in line with the behavior and activities that are deemed appropriate, it is worthwhile to explicitly confirm this because it fosters favorable team processes. On the other hand, if they tell teams that they should focus on other activities than the ones they are passionate about, our findings suggest that it may be important to constructively guide the teams towards the right focus, as to avoid adverse team dynamics.

12. As I stated earlier, I am very enthusiastic about this area of study. I think this study fills am important gap in the literature. I hope my comments about your paper are useful to you, and I wish you luck as you pursue this work.

Thank you once more for your suggestions. We feel that they have enabled us to improve the paper substantially, and we are looking forward to your reaction on this new version of the manuscript.

Response to Reviewer 2

Responses are written in blue.

The manuscript addresses an interesting question in the new venture team entrepreneurial passion (TEP) research – how does TEP influence team performance and the contextual boundaries of the working mechanism. Extant literature of new venture team focuses on members' demographic attributes and functional background as important inputs, but few have investigated other deep-level attributes. This study could fill this gap.

However, I have a number of concerns regarding the theorization and contribution of this new approach. In the spirit of providing constructive comments, suggestions will be proposed where appropriate.

We are glad that you find our research question interesting and that you see potential in our study. Below, we will discuss in detail how we have taken your comments and suggestions into account in order to further improve our study.

Comment 1. (A) Mismatch between theories and selection of study variables. Based on the social identity theory, when the focus of this study is TEP, it is more reasonable to think team identification, trust, or team cohesion/integration as the working mechanism, because TEP emphasized a shared team identity, just as the author(s) showed in the H1 development. I know relational conflict is a typical index of team members relation, but it usually used to reflect incompatibility of identities, that is why more studies on team diversity/faultline used it as a working mechanism. It is strange to find that the author(s) used low relationship conflict to represent high trust and team cohesion. (B) In addition, in the argument you proposed that "TEP...has the potential to reduce relationship conflict..." (page 9), it sounds more like that TEP could moderate the effect of relational conflict, rather than as an antecedent of conflict.

(A) Thank you for this critical note. We have carefully revisited extant work to verify the appropriateness of relationship conflict as our mediating variable. We are still convinced about our choice to include relationship conflict in our model, and followed the suggestion of Reviewer 1 to highlight the importance of the construct more in the introduction section. In the introduction section, we now more extensively motivate our choice for relationship conflict as a mediator between TEP and team performance. In particular, we write that we follow the suggestion of Cardon et al. (2017) that team entrepreneurial passion may help a team avoid adverse team processes such as dysfunctional conflict. We further argue that it is rather surprising that the construct of relationship conflict has been largely overlooked in the passion literature, given that – just like passion – the phenomenon is emotional in nature (Amason & Sapienza, 1997), and given its importance in the literature on entrepreneurial teams (Klotz et al., 2014). In fact, relationship conflict is known to be highly common in the context of new ventures (Chandler, Honig, & Wiklund, 2005; Schjoedt, Monsen, Pearson, Barnett, & Chrisman, 2013) and, in contrast to other forms of conflict (like, for example, task conflict), has consistently been proven to have detrimental

effects on new venture team turnover (Vanaelst, Clarysse, Wright, Lockett, Moray, & S'Jegers, 2006) and performance (de Wit, Greer, & Jehn, 2012).

Nevertheless, we understand that constructs such as cohesion and social integration would be interesting mediating variables as well. We therefore include this suggestion in our discussion of avenues for future research.

(B) We indeed wrote that "TEP...has the potential to reduce relationship conflict...". In our view, this is something different than saying that "TEP has the potential to reduce the effect of relationship conflict on team performance". However, we understand that our initial formulation may have raised doubts and misinterpretations. We have carefully proofread our current manuscript in order to avoid misleading sentences as the one discussed here.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Amason, A. C., & Sapienza, H. J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. Journal of Management, 23(4), 495-516.

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. Journal of Management, 40(1), 226-255.

Chandler, G. N., Honig, B., & Wiklund, J. (2005). Antecedents, moderators, and performance consequences of membership change in new venture teams. Journal of Business Venturing, 20(5), 705-725.

Schjoedt, L., Monsen, E., Pearson, A., Barnett, T., & Chrisman, J. J. (2013). New venture and family business teams: Understanding team formation, composition, behaviors, and performance. Entrepreneurship Theory and Practice, 37(1), 1-15.

Vanaelst, I., Clarysse, B., Wright, M., Lockett, A., Moray, N., & S'Jegers, R. (2006). Entrepreneurial team development in academic spinouts: An examination of team heterogeneity. Entrepreneurship Theory and Practice, 30(2), 249-271.

de Wit, F. R. C., Greer, L. L., & Jehn, K. A. (2012). The paradox of intragroup conflict: A meta-analysis. Journal of Applied Psychology, 97(2), 360-390.

Comment 2. On page 28 and Supplementary 3.2.2, you did consider the effect of diversity in individual entrepreneurial passion, but I don't know why you have to look at the interaction effect of diversity and TEP. If you could look at their direct effect on team performance respectively and compare the effect strength, it could be another contribution to the entrepreneurial passion study. Besides, in the discussion section on page 30, the quotes from the interview more reflect inventor and founder roles diversity effect. If you could compare the

effects of team passion diversity (both intensity separation and focus variety), mono-focal and poly-focal TEP, this may make another contribution.

We agree that there is value in investigating the link between (diversity in) individually experienced passions and the emergence of TEP, as advanced by Cardon et al. (2017) in their theoretical model. However, we think that our understanding of this bottom-up process can only be advanced by a fine-grained investigation of the affective and identity processes that precede the experience of TEP. As the editor asked us to focus our theoretical development section more, we have decided not to include this part of Cardon et al.'s (2017) theoretical model. Although we regard these bottom-up processes as a very interesting topic for future research, we believe that incorporating them would harm the focus of the study and compromise the level of detail required to advance the field. In short, we have decided to focus on the link between team entrepreneurial passion, relationship conflict and performance, which enables us to provide the necessary theoretical substance as well as empirical rigor in order to advance our understanding of the link between TEP and team outcomes. However, in our revised discussion section, we do mention the link between individually experienced passions and the emergence of TEP as an interesting avenue for future research.

We were able to incorporate your suggestion to add insights on monofocal and polyfocal TEP to our study, though. Thank you for encouraging us to investigate these different types of TEP more in-depth. We have rewritten the theory section and conducted additional analyses in order to take this comment into account. In particular, we now build on identity control theory and literature on new venture life cycle stages to theorize that teams in the conception stage will benefit more from monofocal TEP for inventing than from polyfocal TEP for inventing and founding, which in turn is better than monofocal TEP for founding. We further argue that teams in the commercialization stage will benefit more from polyfocal TEP for inventing and founding compared to monofocal TEP for one of both roles. For more details, we gladly refer to our manuscript.

In order to test these hypotheses, we now complement our linear multi-group mediation model with a polynomial multi-group mediation model with response surface analyses. The latter technique is particularly relevant if one wants to study how the combination of two predictors relate to a certain outcome (Edwards & Parry, 1993; Shanock et al., 2010). The response surface plots that are now included in the paper allow us to visually show how combinations of TEP for inventing and TEP for founding - and in particular monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP - are related to relationship conflict and team performance. We believe these analyses and the corresponding findings allow us to make a clear and strong contribution to the existing literature.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggestad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining moderation and overcoming limitations of difference scores. Journal of Business and Psychology, 25(4), 543-554.

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. Academy of Management journal, 36(6), 1577-1613.

Comment 3. Temporal fit of TEP. This should be one of the most important contributions of this study, therefore, I expect that how fit and mis-fit of TEP with team development stages will influence the working mechanism of TEP through relationship conflict. Since the author(s) mentioned the identity activation mechanism, can we imply that once more identities are activated, such as teams have developed into expanding stages, the positive effect of TEP will disappear or even turn into negative effect. If this is true, again, the author(s) should consider multiple entrepreneurial identities together (team passion diversity, mono-focal and poly-focal TEP) to help tangle the influence of development stage.

Thank you for this suggestion. We now focus our theorizing more explicitly on why and how we expect the working mechanism to differ between both development stages, and provide more in-depth explanations about the role of fit and misfit between TEP and venture development stage. More specifically, we now explain that we expect that TEP will differently relate to relationship conflict as a result of self-verification processes that occur when a team engages in social interactions with external stakeholders. We describe that the outcome of such a verification process can be twofold. The comparison can yield a sense of validation when the team's passion focus corresponds to the perceived external expectations, or a sense of rejection when the team perceives a mismatch between its passion focus and how it perceives the stakeholders' expectations (Corley & Gioia, 2004). We on the one hand expect that a team that experiences TEP towards a certain role will engage less in relationship conflict (and thereby experience better team performance) when it feels that the role (and thus activities) it is passionate about is approved by its external stakeholders. On the other hand, perceived divergence between the focus of the team's passion and the perceived external expectations may prevent the team from leveraging their TEP, and increase relationship conflict instead (resulting in reduced team performance). Incorporating insights from the literature on new venture life cycle stages, we theorize that a team's TEP is only validated through stakeholder interactions when these stakeholders see a fit between the activities the team is passionate about and the development stage of the venture. We hypothesize that in the early conception stage, TEP for inventing reduces relationship conflict, while TEP for founding increases relationship conflict (leading to increased and decreased team performance, respectively). In the commercialization stage, we expect both TEP for inventing and for founding to reduce relationship conflict and improve team performance.

As discussed in our response to your previous comment, we now also explicitly look at the effects of monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP for inventing and founding.

References:

Corley, K. G., & Gioia, D. A. (2004). Identity ambiguity and change in the wake of a corporate spin-off. Administrative Science Quarterly, 49(2), 173-208.

Comment 4. Qualitative data. In the Discussion section, the author(s) provided some findings from the qualitative data to explain the non-supported H1(b) and H2(b), but it looks like some post-hoc theorizations. If the author(s) wanted to use the findings from the qualitative data to support the argument that "It can be argued that this clearer role division makes the collective experience of passion towards an entrepreneurial role less important, thereby canceling out the effect of TEP on relationship conflict and performance." (page 31), the author(s) may consider split the study into Study 1 and Study 2, and provide more details of the findings from the qualitative study. Besides, it is better that the authors could directly measure (maybe code from interviews) team role division or task complexity (Bunderson, van der Vegt, Cantimur, & Rink, 2016) as a moderator to test this argument. Now, the contribution of the qualitative data is quite weak.

Thank you for these insights. Unfortunately, our qualitative data collection was not a systematic study, but rather consisted of interviews with a 'convenience' sample of team members. We could therefore not split our paper in two separate studies, or code the interviews and include the resulting measures in our quantitative analyses. Instead, we have followed the editor's advice to use our qualitative insights to inform our theorizing. In particular, we use two quotes to strengthen our reasoning about the effects of TEP for inventing and TEP for founding in the conception stage. We decided not to reuse the quotes from ventures in the commercialization stage, as these quotes pointed towards the clearer role divisions that were introduced in the teams. Whereas in the previous version of the paper, we argued that clearer role divisions made the experience of TEP less relevant, we now realize, after revisiting Cardon et al. (2017), that these role divisions are actually core to the experience of polyfocal TEP. When different team members are passionate about different entrepreneurial activities, and they understand that all these activities are important for the team as a whole, and thus perceive these passion foci as complementary, a polyfocal TEP may emerge.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Comment 5. The theoretical contributions of this study are not that strong in current version, as well theoretical and practical implications. The authors could better pinpoint these as my previous comments suggested.

We believe that our purified theoretical argumentation and our additional analyses allow us to make much stronger contributions than before. We now, for instance, explicitly look at monofocal and polyfocal TEP, and focus more on the (mis)fit between a team's passion focus and the venture's development stage. We have also rewritten the theoretical contributions and practical implications accordingly.

We are convinced, and hope you agree, that our revised manuscript provides much more substantial theoretical and empirical contributions to the field, as well as to practice.

Comment 6. (A) The moderation effect of stages. It will be helpful if the author(s) could provide simple slop test for the moderation effect of stage. In the moderating effect of Founder TEP in Figure 2, it seems that in the conception stage, the relationship between Founder TEP and relationship conflict was positive but in the commercialization stage was negative. The author(s) could show the simple slop test results to help the audience understand. (B) Besides, even if the temporal fit argument sustains, the author(s) still need to justify why misfit could lead to negative effect (more relationship conflict), as this is inconsistent with existing TEP studies.

(A) Thank you for the question. Our analyses indeed reveal that in the conception stage, the link between TEP for founding and relationship conflict is positive, while this link is negative in the commercialization stage. As you suggest, we therefore consider it very important to differentiate between both stages, and look at the statistical significances of the slopes for both stages separately.

In the **prior version** of our manuscript, we reported a first stage moderated mediation model (i.e. the left part of the model was moderated by development stage). We then reported the structural relation coefficients, including the interaction terms "TEP for inventing x venture stage" and "TEP for founding x venture stage"). According to Preacher et al. (2007), a statistically significant interaction term means a statistically significant difference in the slopes depending on the level of the moderator. Given that the moderator (development stage) was a dummy variable, the interaction effect automatically indicated that the effect of TEP for inventing or TEP for founding on relationship conflict was significantly different between both stages.

More specifically, in the previous version of the manuscript, the "conditional direct effects" reported in the lower part of Table 3 showed the statistical significances of the relationships for both stages separately, and thus represented the simple slope tests. For instance, the relationship between TEP for founding and relationship conflict was significantly positive in the conception stage (β =0.271, p=0.012), but insignificantly negative in the commercialization stage (β =-0.089, p=0.200). Similarly, the "conditional indirect effects" reported in Table 4 of the first manuscript could be seen as extended simple slope tests, indicating whether an indirect relationship was significant conditional on the development stage of the venture.

For the **current version** of the manuscript, we - based on suggestions of Reviewers 1 and 3 - no longer hypothesize a general effect of TEP on relationship conflict, and then add a moderating effect of development stage. Instead, we develop our hypotheses separately per

development stage, as we argue that the effect of TEP (for a given entrepreneurial role) on relationship conflict and performance is very different in the conception stage versus the commercialization stage. In line with this revised conceptual argumentation, we now report a linear multi-group mediation model instead of a first stage moderated mediation model. Given that a multi-group mediation model does not report an interaction term, we now explicitly included slope comparisons at the bottom of Table 3, as to compare the effect of TEP for inventing (or founding) on relationship conflict in the commercialization stage versus the conception stage. As can be seen in Table 3, the effects significantly differed between stages. We report these comparisons so that readers can verify this if desired, but we do not focus on these comparisons in the text of our results section, given that this section is split per stage (in line with the theory section).

Besides this linear multi-group mediation model, we now also report a polynomial multigroup mediation model in order to compare the effects of monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP. As can be seen in Table 5, this model includes a continuous by continuous interaction term ("TEP for inventing x TEP for founding"), also making it relevant to look at conditional effects (e.g. effect of TEP for inventing conditional on high TEP for founding). We report the slopes of these conditional direct effects in the same table, and use some of these effects to describe the results for hypotheses 1c and 2c. For instance, whereas both polyfocal TEP and monofocal TEP for inventing are characterized by high TEP for inventing, the former type of passion also comprises TEP for founding while the latter type of passion implies the absence of TEP for founding. To compare both types of TEP, we thus need to evaluate the change in outcome variable for an increase in TEP for founding, conditional on a high level of TEP for inventing.

For the reporting of these effects, we decided to adhere to the common practice to report "high level" of the other variable as mean + standard deviation, and "low level" as mean – standard deviation (Hayes, 2013). It is possible to provide more detailed results, and report effects that are conditional on different percentiles of the other variable (10th, 25th, 50th, 75th, 90th). It is also possible to report the confidence intervals of these effects, instead of the p-values (to verify if these intervals do not overlap, meaning that the effects are significantly different). We computed all these figures, and concluded that they offer exactly the same conclusions for our hypotheses compared to what is currently reported in Table 5 (slopes of conditional direct effects) or Table 6 (slopes of conditional indirect effects). As an example, we find that, in the conception stage, polyfocal TEP reduces relationship conflict significantly more than does monofocal TEP for founding (TEPinv \rightarrow RC_(TEPfnd75th %ile)=-2.833, 95% C.I. [-4.152, -1.513]; TEPinv \rightarrow RC_(TEPfnd90th %ile)=-3.325, 95% C.I. [-4.822, -1.828]).

We added tables with conditional effects at different percentiles, including 95% confidence intervals, to the supplementary materials (Table S.1: conditional direct effects, Table S.2: conditional indirect effects). Given that these table provide exactly the same conclusions as the figures that are currently reported, we decided to report the more concise figures (mean +/- s.d.). If desired, we could add Table S.1 and S.2 to the manuscript, but we personally feel that this would unnecessarily complicate the reporting.

(B) Thank you for the suggestion to justify why a misfit between passion focus and development stage could induce more relationship conflict. We now theorize about this a lot more extensively than in the previous version of the manuscript. We now argue that when a team notices that it is passionate about activities that are questioned by the external actors it approaches, the doubt and ambiguity following from these interactions are expected to prevent the team from leveraging the collective positive feelings they experience towards these activities, but increase relationship conflict instead.

References:

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. Multivariate behavioral research, 42(1), 185-227.

Hayes, A.F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. 2013. Guilford. New York.

Comment 7. (A) Table 1, 3 & 4. In Table 1, it is better to provide the SRMR with and between values to show the model fit. (B) When reporting the Conditional Direct and Indirect Effects in Table 3 and 4, the author(s) should provide the difference scores under two conditions (conception vs. commercialization stage) to show whether the conditional direct effects were supported or not.

- (A) Table 2 (previously table 1): as a result of comments 13 and 16 of Reviewer 3, we decided to simplify the reported CFA in order not to confuse the reader. Rather than reporting a multilevel CFA, we now report a CFA at the individual level, estimated with cluster-robust standard errors. This approach still takes the clustered nature of the data into account (i.e. does not harm the precision of the reported results), and avoids that the section becomes unnecessarily complicated.
- (B) Conditional (in)direct effects: we refer to our answer to your comment 6a.

Comment 8. The format of the manuscript. I would suggest the author(s) to check the Guide for Authors and refine the format, for instance, putting Tables and Figures in the end of the manuscript, and change format of the citations, the numbers (correlations and coefficients), etc.

Thank you for the suggestion to verify the layout of our manuscript. We now made sure the layout, including title formats, citations, numbers, etc., are aligned with the author guidelines, or with prior work in The Journal of Business Venturing if guidelines were absent.

For Table 1 (descriptive statistics), we decided to limit the numbers to two digits because of space concerns. We opted for this solution, given that the guidelines did not mention anything about the number of digits, and that some extant papers in the journal also report correlation tables with two-digit numbers (e.g. Huyghe et al., 2016). Alternatively, if desired, we could insert a table with three-digit numbers. This table would have to be rotated to fit on one page, and would thus take more manuscript space.

In line with the guidelines for "revised submissions", we now report the Tables and Figures at the bottom of the article. For the prior version, we actually adhered to the guidelines of "new submissions", which stated "Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file" (Author Information Pack, 2018, p. 11).

References:

Huyghe, A., Knockaert, M., & Obschonka, M. (2016). Unraveling the "passion orchestra" in academia. Journal of Business Venturing, 31(3), 344-364.

Response to Reviewer 3

Responses are written in blue.

Dear Authors,

Thank you very much for the opportunity to read and comment on your paper "Does team entrepreneurial passion matter? A moderated mediation study on its importance for relationship conflict and new venture team performance" submitted to the Journal of Business Venturing.

This paper focuses on the role of team processes (specifically team relationship conflict) on the association between team entrepreneurial passion for inventing and founding on team performance for new venture teams in two different stages: conception stage and commercialization stage. The authors analyzed survey data from 82 new venture teams in the competition, with self-reported and external judges data. The moderated mediation model is analyzed through structural equation modeling in R. Implications are drawn for literature on new venture teams and entrepreneurial passion.

Despite the interest of the research topic on team entrepreneurial passion (TEP) and the need to identify the mechanisms and conditions underlying the relationship between TEP and performance, there are several major concerns in the literature review, methods, results and discussion sections of the manuscript. Below, I present a systematic list of most of my concerns. I hope that the authors can find these comments relevant and helpful to further develop your study.

We are glad that you find our research question interesting, and appreciate the time and effort you spent on evaluating the manuscript and providing constructive feedback. Below, we will discuss in detail how we have taken your comments and suggestions into account in order to further improve our study.

Comment 0. Abstract - The abstract is not very clear. First, it refers to social identity theory, when the paper is mostly based on collective identity and group affect. Second, it is confusing when referring to the different developmental stages of the venture. Would benefit from clearer writing.

Thank you for pointing this out. We have rewritten the abstract in accordance with the revised version of the paper, and have carefully paid attention to your comment upon doing so.

Comment 1. Introduction - The introduction section is not very efficient in presenting the problem of the paper and the contribution of the paper. The first paragraph does a good job of presenting overall the study and on setting up the stage. However, in the second paragraph, there is a shift to individual level entrepreneurial passion, which feels distracting and not needed. As such, more focus is needed on the team-level literature, once this study is all at the team-level.

We always find it challenging to write a clear and compelling introduction, so we were glad to have your and Reviewer 1's suggestions as a starting point for enhancing the section. We have now rewritten the introduction section in order to explain more clearly why our study is important, why it is novel and necessary, and which contributions it makes. We now also limit the manuscript space about entrepreneurial passion at the individual level to the minimum, and shift the focus to the team level instead. We first shortly explain why it is important for the field to investigate passion at the team level. We then explain that existing research has reported puzzling findings with respect to the relationship between TEP and team performance, and that we therefore need to understand the mechanisms underlying this relationship. We now also put more emphasis on the importance of relationship conflict as mediating variable, and are convinced that we now provide a better positioning to introduce this variable into the entrepreneurial passion literature.

With respect to the first paragraph of the introduction, we received the feedback from Reviewer 1 that this paragraph seemed more like an abstract than an attempt to "hook" the reader. We therefore decided to also adjust the first paragraph of the introduction section.

Comment 2. On page 4, the introduction seems to be a bit repetitive. The authors present the hypotheses and the results, and it reads repetitively.

Thank you for pointing this out. While rewriting the manuscript, we strived for a good balance between not writing in a repetitive way and maintaining consistency/clarity throughout the paper. In the introduction section, for instance, we made sure that the results did not read as a repetition of the hypotheses.

Comment 3. In the contributions of the study, these again seem quite repetitive with what has been said before.

3.1. For example, contribution 1 is that this study "extends the knowledge about team entrepreneurial passion by elaborating on its implications for team processes - in particular, relationship conflict - and resulting team performance." We know this already from the previous text, but why is this important?

In line with suggestions by Reviewer 1, the new version of the paper comprises a different positioning of the paper in the entrepreneurial passion literature, with more emphasis on why it is important to investigate the mechanisms and contingencies underlying the TEP – performance relationship. We for instance write that scholars have emphasized that, in order to better understand the drivers of new venture performance, we ought to examine motivations, cognitions, and behavior at multiple levels of analysis (Hitt, Beamish, Jackson, & Mathieu, 2007), and have to build insights on how these constructs interplay in a team context, because many new ventures are managed by a team rather than by a solo entrepreneur (Klotz et al., 2014).

We also explain that Santos and Cardon (2018), in the only empirical study investigating TEP to date, find that whereas TEP for inventing has a positive effect on team performance, TEP for founding has a negative (although insignificant) effect. Also, when comparing teams that are passionate about multiple entrepreneurial roles (polyfocal TEP) with teams that are passionate about a single entrepreneurial role (monofocal TEP), their findings are

mixed. We then argue that, given the puzzling findings of this prior work, research that focuses on the underlying mechanism (through mediation) is expected to provide a better understanding of how TEP influences team performance. We believe that this altered positioning of the paper - together with a rewritten paragraph about our contributions - clarifies the need for this study, and how it exactly contributes to the field.

References:

Hitt, M. A., Beamish, P. W., Jackson, S. E., & Mathieu, J. E. (2007). Building theoretical and empirical bridges across levels: Multilevel research in management. Academy of Management Journal, 50(6), 1385-1399.

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. Journal of Management, 40(1), 226-255.

Santos, S. C., & Cardon, M. S. (2018). What's love got to do with it? Team entrepreneurial passion and performance in new venture teams. Entrepreneurship Theory and Practice, 1042258718812185.

3.2. The second contribution refers to the temporal nature of team entrepreneurial passion. This would be an important contribution, but is related to a major concern I have on this paper as the temporal nature of TEP is not really assessed. The authors do not measure/assess how TEP changes over time (which would be the temporal nature of TEP), but they rather compare TEP in new venture teams in two different stages of the process: conception stage (early stage) and commercialization stage (a bit further down the road). This is not much about the temporal nature of TEP (as the teams are not measured in different time moments or over time – this is a suggestion the authors raise for future research) but is more about the contextual nature of TEP depending on the stage of the venture. This confusion or misinterpretation of the "temporal nature of TEP" is a critical weakness of the manuscript at this point. In the best case, comparing NVT's in the conception and commercialization stage might be a proxy for time or for the "temporal lens". More caution is needed when using this language and not developing a panel study or a longitudinal study.

Thank you for pointing this out. We have carefully checked the paper and have rewritten all sections that were falsely hinting at the temporal nature of our research.

Instead, we are now much more explicit about the fact that we investigate the mechanism in ventures that operate in two different development stages. We also provide more indepth explanations about the goals and challenges faced in each stage, and how these impact the social interactions with external stakeholders. More specifically, we now explain that we expect that TEP will differently relate to relationship conflict as a result of self-verification processes that occur when a team engages in social interactions with external stakeholders. We describe that the outcome of such a verification process can be twofold. The comparison can yield a sense of validation when the team's passion focus corresponds to the perceived external expectations, or a sense of rejection when the team perceives a mismatch between its passion focus and how it perceives the stakeholders' expectations (Corley & Gioia, 2004). We on the one hand expect that a team that experiences TEP towards a certain role will engage less in relationship conflict when it feels that the role and activities it is passionate about are approved by its external stakeholders. On the other hand, perceived divergence between the focus of the team's passion and the perceived external expectations may prevent the team from leveraging their TEP, and increase relationship conflict instead.

References:

Corley, K. G., & Gioia, D. A. (2004). Identity ambiguity and change in the wake of a corporate spin-off. Administrative Science Quarterly, 49(2), 173-208.

3.3. The third contribution is too succinct, and it feels to be very close to the contribution #1. More theoretical argumentation is needed here, explaining the processes and mechanisms that are proposed to support these contributions. Here is another example where the introduction seems too repetitive.

We now better explain in the introduction section how we contribute to the new venture team literature. We clarify that by relying on secondary data such as demographic characteristics of new venture teams, prior work has fallen short of uncovering the actual underlying psychological properties that impact team processes and outcomes (Klotz et al., 2014; Priem, Lyon, & Dess, 1999). Our study, focused on the psychological construct of TEP, contributes to the field by directly unraveling the cognitions, motivations, and emotions that determine relationship conflict.

We hope the revised introduction section makes clear that this contribution is different from the first one. In the introduction section, we first describe how we contribute to the **entrepreneurial passion literature** by contextualizing our research, and by shifting the focus to the team level. We primarily contribute to this literature stream on the one hand by showing that the experience of passion has different implications depending on a venture's development stage, and on the other hand by investigating the consequences of TEP for team processes and performance. The contribution you refer to deals with our contribution to the **new venture team literature**. Here, the major contribution is that the new venture team literature has to date used surface-level variables such as demographic characteristics as proxies for cognitions and emotions experiences in a team context. This research stream explicitly asked for research that gathers primary data, reflecting actual cognitions and emotions. Our study answers this call, as we put forward TEP as an antecedent of relationship conflict and team performance.

References:

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. Journal of Management, 40(1), 226-255.

Priem, R. L., Lyon, D. W., & Dess, G. G. (1999). Inherent limitations of demographic proxies in top management team heterogeneity research. Journal of Management, 25(6), 935-953.

3.4. (minor comment). the second sentence on the last paragraph of page 4 seems to be incomplete (and there are 4 lines with references that are not needed).

Good point. We removed this sentence from the manuscript.

Comment 4. Theory and Hypotheses - Overall the theory and hypotheses section are well written. However, there is too much detail, too much information that is not needed when telling the story of this study. It reads like a very detailed review in some sections, deviating the reader's attention to complementary information. For example, explaining the Vallerand model of passion is not critical for the story of this paper.

Thank you for pointing this out. In line with your suggestion, we have streamlined the argumentation underlying our hypotheses by removing references to literature that is not crucial for this argumentation, such as the work by Vallerand and colleagues. We also eliminated the section on individual-level passion, following your suggestion raised in an earlier comment to immediately focus on the team level.

Comment 5. In the section on Team Entrepreneurial Passion, there is a lot of detail again, explaining most of the content that was already described by Cardon et al. (2017). For example, all the information on team identity and collective positive feelings were described by Cardon et al. (2017) when the theoretical roots of TEP were explained. This review is well written, and it integrates a couple of other sources and arguments, but there is not much new here and can be significantly reduced. The authors might want to use some of this information and arguments to better support the hypotheses. Having this said, sections 2.1 and 2.2 are mostly repetitive with prior work and there is not much newness.

We followed your suggestion, and significantly shortened the text on TEP. We now limit our explanation of the construct to the minimum necessary information readers need to receive in order to understand TEP if they are not familiar with the construct.

This intervention allowed us to use more manuscript space on detailing the theoretical mechanisms behind our hypotheses.

Comment 6. Section 2.3 is where some we have the new theoretical discussion, by explaining the mediating role of relationship conflict on the relationship between TEP and performance. This is interesting, but:

6.1. We know that TEP leads to better performance (Cardon et al., 2017, and Santos & Cardon, 2018).

- 6.2. We know that Relationship Conflict "has negative effects on the profit, sales, and growth of new ventures (Ensley & Pearce, 2001)." That this, relationship conflict reduces performance.
- 6.3. As the authors say on page 10: "We propose that TEP can reduce relationship conflict because it increases perceived similarity and fosters trust between the members of the new venture team." Based on 6.1. and 6.2., might we consider that TEP mediates the relationship between relationship conflict and performance? The arguments on the last paragraph of page 10 and the first of 11 lead me to think about this other type of model. Food for thought.
- 6.4. Overall, H1a and H1b need more theoretical discussion and substance. It is not clear how relationship conflict acts as a mediator on the relationship between TEP for inventing / founding and performance.

6.1 - 6.4: We looked into this, and think that the story is more nuanced. In 6.1, you suggest that we know that TEP leads to better performance. However, based on extant research, and also iterated by Reviewer 1, we cannot draw clear conclusions about the link between TEP and performance. Cardon et al. (2017) suggest a positive relationship, but Santos & Cardon (2018) find that this positive relationship does not hold for all types of TEP (it seems to depend on the type of entrepreneurial role, and on the number of roles a team is passionate about). We have rewritten the introduction section to better position our paper in this knowledge gap.

We have also drastically rewritten the theory section, and now provide a much more detailed explanation of how the link between TEP and performance is mediated by relationship conflict. We also elaborate a lot more on why we expect this mechanism to differ depending on the venture's development stage, and argue this is due to self-verification processes that occur as a result of different stakeholder interactions. We are convinced that we now better substantiate our reasoning for why relationship conflict mediates the TEP-performance link, and that the revised manuscript provides a much more convincing story.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Santos, S. C., & Cardon, M. S. (2018). What's Love Got to Do With it? Team Entrepreneurial Passion and Performance in New Venture Teams. Entrepreneurship Theory and Practice, 1042258718812185.

6.5. (micro comment) sometimes in the text, it reads Inventor Team Entrepreneurial passion, others it reads TEP for inventing (and the same for Founder TEP and TEP for founding). Consistency would be desirable along the paper and also consistent with prior research (Cardon et al., 2017).

Good point. We have adjusted the terms to "TEP for inventing" and "TEP for founding".

Comment 7. In this section is where "hypothetically" the authors are exploring the temporal nature of TEP, but interestingly, the word temporal or time is not referred here once, but the focus is rather on the developmental stage of the new venture, which makes more sense. The arguments for H2a and H2b are relatively well constructed. Specifically, the parallel between conception stage and TEP for inventing, and commercialization stage and TEP for founding, are strong. However, it may be helpful to add more justification on why the effect of the venture stage is just explored between TEP and relationship conflict, and not also between relationship conflict and performance (i.e., first and second stage moderation mediation model). Would the stage of the venture also impact the relationship between conflict and performance?

Thank you for this suggestion. We theorize that TEP for inventing and TEP for founding will affect relationship conflict differently depending on the venture's development stage. However, based on extant research, we see no theoretical reason to hypothesize that relationship conflict would affect performance differently depending on the development stage. We therefore decided not to elaborate on this in our theory section, and to focus our story on the self-verification processes. However, as we ourselves are very supportive of contextualized and nuanced research, we now report a multi-group mediation model that allows all relationships to differ between stages, rather than the first-stage moderated mediation model in the prior version the paper. Interestingly, while we find that relationship conflict has a negative effect on team performance in the commercialization stage, this effect does not hold in the conception stage. We decided to elaborate on this surprising finding in the discussion section.

7.1. (micro comment) Section 2.4. is called TEP in different stages (of what?)

The section is now called "The role of TEP in different new venture development stages".

Comment 8. A significant portion of theoretical discussion (and empirical test) that is missing on this paper is the type of TEP: the difference between mono-focal and poly-focal TEP (Cardon et al. 2017). This is slightly addressed in the discussion section, but there is prior work that calls for the relevance of the different types of TEP on performance. And, when reading the arguments to H2a and H2b, the authors assume that a team might be passionate about inventing and founding (that is, poly-focal TEP) and also that a team might be passionate first just for a role (i.e., mono-focal TEP: inventing on conception stage, and then for another role (founding on the commercialization stage). How might this impact the argument of this paper? As such, this is a key component on the theory of the nature of TEP and significantly ignored on this research. It might be the case that teams with poly focal TEP (passionate about inventing and founding) will have more conflict than teams passionate about a single role of entrepreneurship (mono-focal TEP). If that is true, this may be important to explain the differences in team performance.

Thank you for encouraging us to investigate these different types of TEP more in-depth. We have rewritten the theory section and conducted additional analyses in order to take this comment into account. In particular, we now build on identity control theory and literature on new venture life cycle stages to theorize that teams in the conception stage will benefit
more from monofocal TEP for inventing than from polyfocal TEP for inventing and founding, which in turn is better than monofocal TEP for founding. We further argue that teams in the commercialization stage will benefit more from polyfocal TEP for inventing and founding compared to monofocal TEP for either role. For more details, we gladly refer to our manuscript.

In order to test these hypotheses, we now complement our linear multi-group mediation model with a polynomial multi-group mediation model with response surface analyses. The latter technique is particularly relevant if one wants to study how the combination of two predictors relate to a certain outcome (Edwards & Parry, 1993; Shanock et al., 2010). The response surface plots that are now included in the paper allow us to visually show how combinations of TEP for inventing and TEP for founding - and in particular monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP - are related to relationship conflict and team performance. We believe these analyses and the corresponding findings allow us to make a clear and strong contribution to the existing literature.

References:

Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggestad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining moderation and overcoming limitations of difference scores. Journal of Business and Psychology, 25(4), 543-554.

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. Academy of Management journal, 36(6), 1577-1613.

Comment 9. Method - I appreciate the detail on the context of this study, but there are a couple of additional questions that need to be clarified. For example: what is the prize of the competition? Who decides if a team applies for the business idea or the business plan track? Is there an incentive for applying to one or the other? I am thinking that, if the prize is the same, a team in the business idea track that has a lot of prior work (and might already have a business plan developed) might decide to compete on that track because it increases the odds of that team to win.

Thanks a lot for pointing this out. We agree that if the prizes would have been the same, start-ups could have been triggered to apply for the business idea track while they were actually ready for the business plan track. Upon designing the study, we were pleased to see that the contest organizers utilized a very rigorous approach to ensure that the start-ups participated in the most suitable competition track. We now clarify this in the "context" section of the paper, by elaborating on the different incentives per track, and by explaining that the organizers redirected participants to the right track if needed. We hope that based on this clarification, you agree that we can safely say that the competition track truly reflects the ventures' development stages.

Comment 10.

10.1. While the qualitative data is referred to as a third type of data sources, it is only mentioned (and briefly) in the discussion. Using this data more thoroughly would be a plus for this study. How can the information collected be used as part of the main results section? Can this be framed as a mixed method study? I feel that the qualitative data is undervalued at it is now. Also on the qualitative data, how were the 26 interviews selected? This was just 1 entrepreneur per team, or all team members were part of the interviews and they included 26 entrepreneurial teams?

Thank you for these insights. Unfortunately, our qualitative data collection was not a systematic study, but rather consisted of interviews with a 'convenience' sample of team members. 22 out of 26 interviews were conducted with one team member. In the other 4 interviews, 2 team members were interviewed simultaneously.

Due to the exploratory nature of these interviews, we are not able to position this paper as a mixed method study. Instead, we have followed the editor's advice to use our qualitative insights to inform our theorizing. In particular, we use two quotes to strengthen our reasoning about the effects of TEP for inventing and TEP for founding in the conception stage. We decided not to reuse the quotes from ventures in the commercialization stage, as these quotes pointed towards the clearer role divisions that were introduced in the teams. Whereas in the previous version of the paper, we argued that clearer role divisions made the experience of TEP less relevant, we now realize, after revisiting Cardon et al. (2017), that these role divisions are actually core to the experience of polyfocal TEP. When different team members are passionate about different entrepreneurial activities, and they understand that all these activities are important for the team as a whole, and thus perceive these passion foci as complementary, a polyfocal TEP may emerge.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

10.2. About the jury assessments, how many judges assessed each team and what is the inter judges reliability for the scores in each team?

For each team, two to four jurors evaluated their submitted document, depending on which round the team reached in the contest. In a first round, each submission was separately evaluated by two judges. Afterwards, the average score of these evaluations was used to establish a ranking of all submissions. In both the business idea and business plan track, projects passed onto the second round if their submission was ranked amongst the top 50% of their track. In the second round, the submission was again evaluated by two other judges, who had not been judges in round one.

Thank you for the suggestion to verify the interrater reliability in order to justify that we use the average competition scores as measures for team performance. We calculated the

intraclass correlation coefficient ICC(K) in R, using the ICC function of the psych package. This measure reflects the extent to which the mean rating assigned by a group of judges is reliable (LeBreton & Senter, 2008). Based on a total of 272 ratings for 86 projects, we obtained an ICC(K) value of 0.70, justifying the use of the average competition score. We now mention this calculation in the section that outlines the measurement of "team performance".

References:

LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. Organizational research methods, 11(4), 815-852.

10.3. Also on the performance measure, the SD is very high. What is the distribution of this variable? Using a natural ln would be helpful to normalize?

Compared to the other variables, the standard deviation of the team performance variable is indeed high. The reason for this is that the variable reflects the competition scores, which range from 0 to 120. We verified the need to transform the variable by assessing whether the variable is normally distributed. The Shapiro-Wilk test returned a test statistic of 0.983, with a p-value of 0.331, indicating that the variable is normally distributed (skewness of - 0.114, and kurtosis of 0.383). The histogram of the variable can be found in supplementary materials. For clarity, we added the results presented above to the description of the team performance measure in the paper.

10.4. What were the instructions for the TEP and relationship conflict items? This is important to mention to clarify the referent shift (I know it's mentioned on the appendix).

Besides the explanation in appendix, we now also explain the referent-shift a little bit more into detail in the text of the paper. We also adjusted a couple of citations in this section, and now mention that we follow Santos & Cardon (2018) (besides Cardon et al., 2013), making it more explicit that we are not the first to shift the scale from the individual to the team level, but that Santos & Cardon (2018) pioneered in this respect.

References:

Cardon, M. S., Gregoire, D. A., Stevens, C. E., & Patel, P. C. 2013. Measuring entrepreneurial passion: Conceptual foundations and scale validation. Journal of Business Venturing, 28(3), 373-396.

Santos, S. C., & Cardon, M. S. (2018). What's Love Got to Do With it? Team Entrepreneurial Passion and Performance in New Venture Teams. Entrepreneurship Theory and Practice, 1042258718812185.

Comment 11. Self-section bias is mentioned on the footnote of page 15, but this might not be enough. The teams that are part of the competition might be self-selected already as they are more passionate about their projects (higher TEP) and because of that, they decided to apply

for the competition. A Heckman correction using the inverse-Mills ratio with a valid exclusion criterion could be used to address sample selection effects (Delmar and Shane, 2003), but as it stands now, I worry that sample selection could present a significant influence on your reported results, and as such it is possible that these findings could be skewed.

We understand your concern about a potential self-selection bias, as our sample was not randomly selected. We have carefully considered your suggestion to apply a Heckman correction to the analyses. We verified the conditions and steps of a Heckman selection model, and although we agree that a Heckman selection model can be a suitable technique to counter self-selection bias, our data unfortunately do not allow us to make use of this technique. We therefore have looked for other possibilities to strengthen our analyses concerning potential self-selection biases. We outline our conclusions related to the Heckman selection correction procedure and our other analyses below.

The Heckman selection model can be applied when there is so-called "incidental truncation" (Certo et al., 2016), meaning that the dependent variable (here: team performance measured by the competition score) is "observed only if other variables take on particular values" (here: if a new venture team participates in the start-up competition) (Wooldridge, 2010, p. 777). The method consists of two steps. First, using data from the broader population, the selection equation is specified, i.e. a probit model in which the probability of being part of the subsample is calculated (in our case: whether the start-up participates in the competition or not). Second, the inverse Mills ratio resulting from step 1 is added to the actual regression equation of interest, and as such accounts for potential sample selection bias (Heckman, 1979). Unfortunately, we do not have the necessary information from the broader population that would allow us to predict why a team decides to participate in the start-up competition or not. We are therefore unable to include a valid exclusion restriction, meaning that a Heckman selection model would not provide us with reliable estimates.

Even though we do not have the possibility to conduct a Heckman selection model, we are convinced that our sample is representative for the population of early-stage new venture teams in Switzerland. The analyses that were included in the prior version of the paper already showed that our final sample is representative for all those that registered for the contest. To substantiate our argument that our final sample is a representative subset of the broader population of early-stage new ventures in Switzerland, we have sought access to aggregated data reported in a study funded by the Swiss governmental body that fosters innovation and entrepreneurship. The data comprises information on industry sector and location of 1,593 Swiss start-ups (defined as young companies that were founded to pursue an innovative and/or technology-driven business idea) incorporated between 2004 and 2016. We were able to juxtapose both samples and found that our sample displays comparable characteristics to the database of the governmental body, both in terms of the industries start-ups operated in (life sciences: 23.26% vs 20.28%, software, hardware, ICT: 39.53% vs 37.29%, industrial sector: 10.47% vs 17.70%, consumer goods: 12.79% vs 12.18%, and services: 13.95% vs 12.55%), and in terms of regions the start-ups were based in (Eastern part of Switzerland: 66.28% vs 63.90%, Western part: 31.40% vs 34.40%, Southern part: 2.32% vs 1.70%).

In summary, even though our sample was not selected in a random way, the alternative analyses we conducted reassure us that the start-ups in our sample are representative for the broader population.

References:

Certo, S. T., Busenbark, J. R., Woo, H. S., & Semadeni, M. (2016). Sample selection bias and Heckman models in strategic management research. Strategic Management Journal, 37(13), 2639-2657.

Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data. MIT press.

Heckman, J. J. (1979). Sample selection bias as a specification error. Econometrica: Journal of the econometric society, 153-161.

Comment 12. Because this sample is cross-sectional in nature, there are serious concerns of endogeneity within the results. While the data analysis procedure is very complete and well developed, this analysis alone cannot rule out the potential of omitted variable bias, simultaneity, reverse causality, etc. Even from a theoretical perspective, the direction of the relationship between passion and performance is questionable within the paper, in such that while greater passion could produce better performance, better performance could also heighten the level of passion that teams experience. Despite the fact that TEP and relationship conflict was measured before the performance (at the beginning of the competition) these were not measured again during the competition. It could be the case that the team started to have more conflicts due to the competition, or that their TEP fluctuated. While ideally, you would have accounted for this with longitudinal data, or an experimental setting, I realize that this is not possible given the constraints of your sample. That being said, a Two-Stage Least Squares (2SLS) instrument variable method (Tang and Wezel, 2015) or related General Method of Moments (GMM) estimators are two analytical methods that can address potential endogeneity issues. These are widely used and generally easy to specify properly (Angrist, Imbens, and Rubin, 1996), and can substantially increase the confidence that your results are less likely to be substantially influenced by endogeneity.

Although performance was measured at a later point in time, and via a different source, than TEP (for inventing and founding) and relationship conflict, we agree that there is a chance that our model is subject to feedback loops. We follow the theorizing of Cardon et al. (2017), who argue that TEP influences the quality of team processes and team performance. Yet, as also explained in that same article, it can indeed be expected that the process of emergence and consequences of TEP is subject to feedback loops. This means that team processes and performance may, over time, influence individuals' experience of passion via top-down affective and identity processes, and the diversity of these individual-level passions may in turn influence TEP via bottom-up affective and identity processes.

As such, we believe that we should not rule out the theoretical possibility of feedback loops. Instead, we should be careful and test whether the results of our models are biased by potential endogeneity. Thank you for your suggestions about techniques that can address this. In order to alleviate these concerns, we applied the Model Implied Instrumental Variable, Two Stage Least Squares (MIIV-2SLS) estimator (Bollen, 2018). The technique tests whether a model is subject to misspecifications, allowing us to apply a two-stage model on multiple equations simultaneously. We find insignificant Sargan test statistics, and model results that are fully in line with the findings of our reported models. This suggests that our results are not substantially affected by endogeneity. We now report this analysis in the robustness checks.

That being said, we are very supportive of future research endeavors with a longitudinal design that include feedback loops and that investigate how all constructs in the theoretical model influence each other over time. We reflect on these possibilities for future research in our discussion section.

References:

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. Academy of Management Review, 42(2), 283-305.

Bollen, K. A. (2018). Model Implied Instrumental Variables (MIIVs): An Alternative Orientation to Structural Equation Modeling. Multivariate behavioral research, 1-16.

Comment 13. Results - The results section of this paper is very well developed. Out of curiosity: the multilevel nature of the data is taken into account on the multilevel confirmatory factor analysis, but not on the moderated mediation model? What is the justification for this? Is this the Multilevel SEM mentioned on the robustness check?

Thank you for the compliment. We are glad to read that you appreciate our efforts of reporting strong and robust results.

We reported the multilevel CFA to take the clustered nature of the data into account. We had the intent to adhere to a similar approach in our moderated mediation model by conducting a multilevel SEM (MSEM), but had to report a SEM model with parceled variables at the team level instead, because the MSEM indeed did not converge. We discussed this issue with two experts in structural equation modeling, and the non-convergence is most likely due to the small cluster sizes. MSEM is a great technique for multilevel modeling, but requires sufficiently large cluster sizes (Preacher, Zhang, & Zyphur, 2011, for instance recommend cluster sizes of at least 20). Given that founding teams typically only consist of a few members, it is hard to apply MSEM, so the SEM model with parceled variables serves as a good alternative.

In the prior version of the paper, we mentioned in the robustness checks that we conducted an MSEM with latent variables for the TEP and relationship conflict variables, but that this model did not converge. We realize, thanks to comment 5 of Reviewer 1, that it was relatively confusing to read about this in the section with robustness checks, and therefore decided to take it out. References:

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. Structural Equation Modeling, 18(2), 161-182.

Comment 14. Is it also possible to depict on the graph the conditional indirect effect of the venture stage on team performance? In other words, a visual representation of the conditional indirect effect and the direct effect of TEP for inventing / founding on team performance, with the indirect effect operating through relationship conflict?

As mentioned in our responses to your comments 7 and 8, we now report a linear and a polynomial multi-group mediation model. We supplement this polynomial model with analyses of response surface plots, which are displayed in Fig. 1 and 2. We took your comment into account, and besides the graphs with relationship conflict as outcome variable, we now also display graphs with team performance as outcome variable.

Comment 15. The slope difference for the interaction effect is significant?

Thank you for the question. Our analyses reveal that in the conception stage, the link between TEP for founding and relationship conflict is positive, while this link is negative in the commercialization stage. As you suggest, we therefore consider it very important to differentiate between both stages, and look at the statistical significances of the slopes for both stages separately.

In the **prior version** of our manuscript, we reported a first stage moderated mediation model (i.e. the left part of the model was moderated by development stage). We then reported the structural relation coefficients, including the interaction terms "TEP for inventing x venture stage" and "TEP for founding x venture stage"). According to Preacher et al. (2007), a statistically significant interaction term means a statistically significant difference in the slopes depending on the level of the moderator. Given that the moderator (development stage) was a dummy variable, the interaction effect automatically indicated that the effect of TEP for inventing or TEP for founding on relationship conflict was significantly different between both stages.

More specifically, in the previous version of the manuscript, the "conditional direct effects" reported in the lower part of Table 3 showed the statistical significances of the relationships for both stages separately, and thus represented the simple slope tests. For instance, the relationship between TEP for founding and relationship conflict was significantly positive in the conception stage (β =0.271, p=0.012), but insignificantly negative in the commercialization stage (β =-0.089, p=0.200). Similarly, the "conditional indirect effects" reported in Table 4 of the first manuscript could be seen as extended simple slope tests, indicating whether an indirect relationship was significant conditional on the development stage of the venture.

For the **current version** of the manuscript, we incorporated your and Reviewer 1's suggestion to include development stage as a moderator for the entire model rather than

only the left part of the model. We therefore now report a linear multi-group mediation model instead of a first stage moderated mediation model. Given that a multi-group mediation model does not report an interaction term, we now explicitly included slope comparisons at the bottom of Table 3, as to compare the effect of TEP for inventing (or founding) on relationship conflict in the commercialization stage versus the conception stage. As can be seen in Table 3, the effects significantly differed between stages. We report these comparisons so that readers can verify this if desired, but we do not focus on these comparisons in the text of our results section, given that this section separately reports the results per stage (in line with the theory section).

Besides this linear multi-group mediation model, we now also report a polynomial multigroup mediation model in order to compare the effects of monofocal TEP for inventing, monofocal TEP for founding, and polyfocal TEP. As can be seen in Table 5, this model includes a continuous by continuous interaction term ("TEP for inventing x TEP for founding"), also making it relevant to look at conditional effects (e.g. effect of TEP for inventing conditional on high TEP for founding). We report the slopes of these conditional direct effects in the same table, and use some of these effects to describe the results for hypotheses 1c and 2c. For instance, whereas both polyfocal TEP and monofocal TEP for inventing are characterized by high TEP for inventing, the former type of passion also comprises TEP for founding while the latter type of passion implies the absence of TEP for founding. To compare both types of TEP, we thus need to evaluate the change in outcome variable for an increase in TEP for founding, conditional on a high level of TEP for inventing.

For the reporting of these effects, we decided to adhere to the common practice to report "high level" of the other variable as mean + standard deviation, and "low level" as mean – standard deviation (Hayes, 2013). It is possible to provide more detailed results, and report effects that are conditional on different percentiles of the other variable (10th, 25th, 50th, 75th, 90th). It is also possible to report the confidence intervals of these effects, instead of the p-values (to verify if these intervals do not overlap, meaning that the effects are significantly different). We computed all these figures, and concluded that they offer exactly the same conclusions for our hypotheses compared to what is currently reported in Table 5 (slopes of conditional direct effects) or Table 6 (slopes of conditional indirect effects). As an example, we find that, in the conception stage, polyfocal TEP reduces relationship conflict significantly more than does monofocal TEP for founding (TEPinv \rightarrow RC_(TEPfnd75th %ile)=-2.833, 95% C.I. [-4.152, -1.513]; TEPinv \rightarrow RC_(TEPfnd90th %ile)=-3.325, 95% C.I. [-4.822, -1.828]).

We added tables with conditional effects at different percentiles, including 95% confidence intervals, to the supplementary materials (Table S.1: conditional direct effects, Table S.2: conditional indirect effects). Given that these table provide exactly the same conclusions as the figures that are currently reported, we decided to report the more concise figures (mean +/- s.d.). If desired, we could add Table S.1 and S.2 to the manuscript, but we personally feel that this would unnecessarily complicate the reporting.

References:

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. Multivariate behavioral research, 42(1), 185-227.

Hayes, A.F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. 2013. Guilford. New York.

Comment 16. Why is the Multilevel SEM a robustness check and not part of the main analysis as you say that the data has multilevel properties? (page 21)? Consistency for purposes of simplicity is needed here. Sometimes, less is more.

We have taken your suggestions into account in two ways. First, we removed the paragraph on MSEM in the robustness checks (we refer to the reply to your comment 13 for more details). Second, we also decided to simplify the reported CFA in order not to confuse the reader. Rather than reporting a multilevel CFA, we now report a CFA at the individual level, estimated with cluster-robust standard errors. This approach still takes the clustered nature of the data into account (i.e. does not harm the precision of the reported results), and avoids that the section becomes unnecessarily complicated.

Comment 17. Discussion and Conclusion - The discussion section suffers from similar weakness as the theory section. First, introducing the excerpts from the qualitative data is interesting, but it falls short or it feels like they were just used "as needed". As such, the reader is not sure of what other relevant information might be in the qualitative data that was not included/mentioned.

In line with suggestions from the editor, we now use the qualitative data to support our theorizing rather than bringing them up in the discussion section.

Comment 18. The relevance of considering mono / poly focal TEP comes very prominently here in the discussion as well. Actually, this is the first place where this is mentioned, as a possible explanation for the results, which sounds like this was just considered a posterior.

We are glad that we were able to incorporate this remark in the revised manuscript. We are convinced, and hope you agree, that the new version of the paper provides much more substantial theoretical and empirical contributions to the field, as well as to practice.

For more information about how we incorporated the distinction between mono- and polyfocal TEP, we refer to our reply to your comment 8.

Comment 19. Page 31, "work ambiguity, enhancing e.g. task focus, decision-making, efficiency, and ultimately performance." There is something missing on this sentence.

This sentence does no longer appear in the manuscript.

Comment 20. Page 31, low TEP is referred, but this is low TEP on what? Founding or inventing, or both?

This sentence does no longer appear in the manuscript.

Comment 21. (A) Page 32 mentions the contributions of this study. Again, this section is quite repetitive with what was mentioned previously. What do we know more about TEP that we didn't know before? More substance would be desirable, instead of referring again to the same arguments presented earlier in the introduction. (B) The contribution referring to the temporal lens needs to be reframed as discussed previously. The design of this study does not provide a temporal lens, and as such, this is not a contribution. It can be a future research avenue, as mentioned on page 33.

(A) We have rewritten the contribution section, and now provide substance on how we contribute to the different fields.

We now for instance better explain what we already knew based on prior research. We thereby primarily focus on the study of Santos & Cardon (2018), given that this the only empirical study to date investigating TEP. Furthermore, we also elaborate on how exactly our results are important for advancing the field.

(B) Thank you for the suggestion. We have removed the text that was claiming a contribution based on the temporal nature of our research. We now focus the contributions on the stages instead, and mention the need for longitudinal research in the avenues for future research.

Comment 22. Implications for practitioners can be expanded. Comparing the detail and the level of review on the theory section with the discussion section, it is clear that this section is underdeveloped. What can new venture teams learn based on these results? What would the authors say back to the teams that participated in this study? What can the venture competition do based on these results?

We significantly expanded this section, and elaborate a lot more on how this study has implications for practitioners. We refer to the manuscript for more details.

Comment 23. The limitations are not very clear, except for limitation 1. All the others, the limitations are not addressed, but other future research avenues are explored. For example, focusing on the potential positive consequences of TEP (your limitation #3) is not a limitation – was a deliberate choice of your research question. Focusing on the negative effects of TEP is another research avenue that is interesting, but it is not a limitation.

Thank you for pointing this out. We made sure the current manuscript is not subject to the same mistake anymore.

I hope these comments were somehow useful to improve this study, and I wish all the best wishes to the author/s.

Thank you once more for your suggestions. We feel that they have enabled us to improve the paper substantially, and we are looking forward to your reaction on this new version of the manuscript.

DOES TEAM ENTREPRENEURIAL PASSION MATTER FOR RELATIONSHIP CONFLICT AND TEAM PERFORMANCE? ON THE IMPORTANCE OF FIT BETWEEN PASSION FOCUS AND VENTURE DEVELOPMENT STAGE

HIGHLIGHTS

- We examine how and when team passion relates to team performance
- Team passion influences performance through relationship conflict
- The effects depend on venture stage because of different goals and expectations
- Teams benefit from passion when they focus on activities that fit the venture's stage
- A mismatch between passion focus and venture stage increases relationship conflict

DOES TEAM ENTREPRENEURIAL PASSION MATTER FOR RELATIONSHIP CONFLICT AND TEAM PERFORMANCE? ON THE IMPORTANCE OF FIT BETWEEN PASSION FOCUS AND VENTURE DEVELOPMENT STAGE

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Acknowledgments

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Declarations of interest

None

DOES TEAM ENTREPRENEURIAL PASSION MATTER FOR RELATIONSHIP CONFLICT AND TEAM PERFORMANCE? ON THE IMPORTANCE OF FIT BETWEEN PASSION FOCUS AND VENTURE DEVELOPMENT STAGE

ABSTRACT

This study advances the literature on entrepreneurial passion, which struggles to explain when and how the experience of passion impacts venture-level performance, by shifting the focus to the team level and investigating the mechanisms and contingencies underlying this relationship. Drawing on identity control theory and the literature on new venture life cycle stages, we theorize and empirically test that team entrepreneurial passion (TEP) affects new venture team performance via relationship conflict, and that this mechanism differs depending on whether the team's passion focus is aligned with the venture's development stage. Based on survey data and start-up competition scores from 86 new venture teams, we find that a prerequisite for a team to benefit from the experience of TEP, is that its passion focus at least reflects the entrepreneurial activities that external stakeholders deem appropriate for the specific development stage the venture operates in. Otherwise, these stakeholders will question the activities the team is passionate about, leading to adverse outcomes. Implications for research and practice are discussed.

Keywords: entrepreneurial passion, new venture teams, relationship conflict, team performance, new venture life cycle stages

Executive summary

While it is widely acknowledged that an individual entrepreneur's passion serves as an important motivational source during the pursuit of entrepreneurship activities (Cardon, Wincent, Singh, & Drnovsek, 2009), the consequences of a joint experience of entrepreneurial passion in new venture teams still remain unclear while many new ventures are actually managed by a *team* of individuals (Chen, Liu, & He, 2015; Klotz, Hmieleski, Bradley, & Busenitz, 2014). In that respect, entrepreneurial passion researchers have recently suggested that new venture teams may benefit from favorable team dynamics and enhanced performance when team members collectively experience passion, also labelled team entrepreneurial passion (TEP) (Cardon, Post, & Forster, 2017). Yet, the only study that has empirically investigated TEP to date suggests that it does not unilaterally lead to improved performance (Santos & Cardon, 2018). In their study, Santos and Cardon (2018) find that TEP for inventing activities for instance improves team performance, while this effect does not hold for TEP for founding activities. They further also report mixed findings for comparisons between teams that are passionate about multiple entrepreneurial roles (polyfocal TEP) and teams that are passionate about a single entrepreneurial role (monofocal TEP).

In this study, we shed light on the way in which TEP relates to new venture team performance, and advance the academic understanding of when TEP for certain entrepreneurial activities is beneficial, and when it is not. We draw on identity control theory and literature about new venture life cycle stages to theorize that TEP leads to increased or decreased relationship conflict, and thus better or worse performance, depending on whether external stakeholders see a fit between the activities a team is passionate about and the development stage of the venture.

We rely on survey data and jury assessments from 86 new venture teams to test our theorizing in two different multi-group mediation models. Our results show that new venture teams in the conception stage, whose challenge is to develop a working prototype and identify market opportunities, engage in less relationship conflict as long as they display TEP for inventing. When a team in this stage is only passionate about founding activities, however, they experience more relationship conflict because external stakeholders question this focus on founding activities for ventures that are this early in the development process. Furthermore, teams that operate in the more advanced commercialization stage, and thus work towards a product launch, experience less relationship conflict when they display both TEP for inventing and for founding compared to when they are only passionate about one of both. Interestingly, while these effects on relationship conflict lead to the expected performance implications in the commercialization stage, this is not the case in the conception stage.

Overall, we contribute to the entrepreneurial passion literature by demonstrating that TEP impacts relationship conflict, a crucial yet underexposed team process that helps explaining how the experience of passion relates to venture-level outcomes. We further suggest that external stakeholders value different entrepreneurial activities in different venture development stages, and that teams need to be at least passionate about these valued activities in order to benefit from the experience of TEP. At the same time, we add to the new venture team literature by showing that relationship conflict and team performance do not only stem from demographic team characteristics, but also from team passion. More practically, our findings help new venture teams understand the importance of fit between their passion focus on the one hand, and goals and stakeholder expectations peculiar to their development stage on the other hand. Teams can best try to nurture positive group affect towards entrepreneurial activities that are deemed appropriate for ventures in their stage, because jointly experienced positive feelings towards these activities enable them to benefit from enhanced team functioning. In addition, we provide useful insights for stakeholders such as grant suppliers, start-up support initiatives, and investors, by showing them that their opinion impacts team dynamics, and that they can foster constructive dynamics and enhance performance in their portfolio companies by stimulating the appropriate kind of team passion for the stage the venture is operating in.

1 Introduction

While research on individual entrepreneurs agrees on the importance of their individual passions as motivational constructs for engaging in entrepreneurial activities (Cardon & Kirk, 2015; Cardon et al.,

2009; Huyghe, Knockaert, & Obschonka, 2016; Murnieks, Mosakowski, & Cardon, 2014), the field encounters difficulties to identify how entrepreneurial passion impacts venture-level outcomes such as performance (Chen et al., 2015). Scholars have emphasized that, in order to better understand the drivers of new venture performance, we ought to examine motivations, cognitions, and behavior at multiple levels of analysis (Hitt, Beamish, Jackson, & Mathieu, 2007), and have to build insights into how these constructs interplay in a team context (Klotz et al., 2014). After all, many new ventures are managed by a team rather than by a solo entrepreneur (Klotz et al., 2014).

Recently, Cardon et al. (2017) have theorized that new venture teams may differ in the extent to which they experience team entrepreneurial passion (TEP), i.e. "shared intense positive feelings for a collective team identity that is high in identity centrality for the [new venture team]" (p. 286). They have further suggested that TEP could lead to better-quality team processes and performance. However, Santos and Cardon (2018), in the only empirical study investigating TEP to date, find that whereas TEP for inventing has a positive effect on team performance, TEP for founding has a negative (although insignificant) effect. Also, when comparing teams that are passionate about multiple entrepreneurial roles (polyfocal TEP) with teams that are passionate about a single entrepreneurial role (monofocal TEP), their findings are mixed.

In order to better understand how and in which circumstances TEP is beneficial for new venture team performance, this study follows prior work (Baum & Locke, 2004; Baum, Locke, & Smith, 2001; Hmieleski & Baron, 2008) stating that an investigation of complex linkages should consider both the mediating mechanisms and the moderating factors that determine when such mediating effects take place. Specifically, we focus on the role of relationship conflict, i.e. conflict that arises from personal-related disaffection (Amason & Sapienza, 1997), and investigate under which circumstances this relationship conflict plays a positive versus negative mediating role in the link between TEP and new venture team performance. By focusing on the mediating effect of relationship conflict, we follow the suggestion of Cardon et al. (2017) that team entrepreneurial passion may help a team avoid adverse team processes such as dysfunctional conflict. It is surprising that the construct of relationship conflict has been largely overlooked in the passion literature, given that – just like passion – the phenomenon

is emotional in nature (Amason & Sapienza, 1997), and given its importance in the literature on entrepreneurial teams (Klotz et al., 2014). In fact, relationship conflict is known to be highly common in the context of new ventures (Chandler, Honig, & Wiklund, 2005; Schjoedt, Monsen, Pearson, Barnett, & Chrisman, 2013) and, in contrast to other forms of conflict (like, for example, task conflict), has consistently been proven to have detrimental effects on new venture team turnover (Vanaelst, Clarysse, Wright, Lockett, Moray, & S'Jegers, 2006) and performance (de Wit, Greer, & Jehn, 2012).

Building on identity control theory, this study proposes that teams experience reduced or increased relationship conflict – and thereby also perform better or worse – depending on the extent to which they experience TEP, and whether they perceive that the focus of their TEP on particular entrepreneurial roles is validated or rejected by the external stakeholders they approach. Incorporating insights from the literature on new venture life cycle stages, we theorize that a team's TEP is only validated through stakeholder interactions when these stakeholders see a fit between the specific activities the team is passionate about and the development stage of the venture. We hypothesize that in the early conception stage, when the goal is to develop a working prototype and identify market opportunities, TEP for inventing reduces relationship conflict, while TEP for founding increases relationship conflict, leading to increased and decreased team performance, respectively. In the commercialization stage, when the objective is to launch the product or technology, we expect both TEP for inventing and for founding to reduce relationship conflict and improve team performance. As such, we expect monofocal TEP for inventing to be optimal in the conception stage, and polyfocal TEP for inventing and founding in the commercialization stage. We focus on TEP for inventing and for founding, as these are paramount in new ventures (Cardon et al., 2009; Gielnik, Spitzmuller, Schmitt, Klemann, & Frese, 2015).

These hypotheses are tested and partially confirmed using survey data and jury assessments from 86 new venture teams that participated in a start-up competition in Switzerland. Results from a linear multi-group mediation model and a polynomial multi-group mediation analysis with response surface analysis demonstrate that new venture teams in the conception stage engage in less relationship conflict when they experience monofocal TEP for inventing or polyfocal TEP for both inventing and founding,

as opposed to when they experience monofocal TEP for founding. Furthermore, teams that have advanced into the commercialization stage experience less relationship conflict when they display polyfocal TEP for both inventing and founding than when they experience monofocal TEP for either inventing or founding. While in the commercialization stage, these effects on relationship conflict have performance implications as expected, this is not the case in the conception stage.

This study answers the call of Chen et al. (2015) and Cardon et al. (2017) to investigate the role of team-level passion for new venture performance in more detail. First and foremost, the study shows that not all types of TEP are equally helpful in each development stage. Instead, TEP is only beneficial when the new venture team is passionate about entrepreneurial activities that fit the venture's development stage, because only then will their passion focus be confirmed by external stakeholders. Second, this study demonstrates that relationship conflict, a construct that has hitherto largely been ignored in the entrepreneurial passion literature, is core to understanding the relationship between TEP and team performance, especially in the commercialization stage. It thereby also answers the call, raised in the new venture team literature, to directly unravel the cognitions, motivations, and emotions that determine relationship conflict (Klotz et al., 2014). By relying on secondary data such as demographic characteristics of new venture teams, prior work has fallen short of uncovering the actual underlying psychological properties that impact team processes and outcomes (Klotz et al., 2014; Priem, Lyon, & Dess, 1999). Finally, by distinguishing between different venture development stages, our study cultivates a more fine-grained understanding of passion, relationship conflict, and team performance in new venture teams, and stresses the importance of investigating these phenomena from a contingency perspective.

In the next section, we first provide the theoretical background on TEP, and the mechanisms underlying its relationship with relationship conflict and team performance. We then apply these insights to develop hypotheses about how TEP for specific entrepreneurial roles differently influences team performance via relationship conflict depending on the new venture's development stage.

6

2 Theory and hypotheses

2.1 Team entrepreneurial passion

According to Cardon et al. (2009), an individual entrepreneur experiences entrepreneurial passion when (s)he has intense positive feelings from being engaged in activities related to meaningful entrepreneurial roles, such as inventing a product or service, founding a company, and/or growing and expanding the business. However, as new ventures are often managed by a team rather than a solo entrepreneur (Klotz et al., 2014), scholars have recently raised the importance of entrepreneurial passion at the team level (Cardon et al., 2017). In a new venture team, defined as "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture" (Klotz et al., 2014, p. 227), we talk about TEP when team members acknowledge that the team *as a whole* has a passion for certain entrepreneurial activities (Cardon et al., 2017). A team thus experiences TEP for a specific entrepreneurial role if, irrespective of the individual team members' entrepreneurial passions, this role (1) is meaningful to the team and is internalized as a collective team identity and (2) gives rise to collective positive feelings.

On the one hand, Cardon et al. (2017) argue that TEP can only emerge if a team has a collective central role identity, meaning that the team as an entity shares this identity. Prior literature states that team identity is a group-level phenomenon that enables the team members to think, feel, and act as if they were the team as a whole (Gundlach, Zivnuska, & Stoner, 2006). Ashforth, Rogers, and Corley (2011) similarly argue that a collective identity reflects a situation where the "who we are as a collective exists separately from any individual in the collective" (p. 1146, italics added). They describe several instances through which this collective identity can be manifested, such as values, goals, routines, information flows, and activities (Ashforth et al., 2011). Given the entrepreneurial context of this study, we focus on activities related to entrepreneurial roles (Cardon et al., 2009).

On the other hand, for TEP to arise, the team must experience collective positive feelings – also referred to as positive group affect (Walter & Bruch, 2008) – towards the previously discussed team identity (Cardon et al., 2017). As mentioned by Knight and Eisenkraft (2015, p. 1215), "group affect

is the collective-level analogue to individual state affect and represents the jointly experienced, shared feelings that group members hold in common at a given point in time". Prior research states that the transfer of individual emotions is a prerequisite for group affect to emerge (Barsade & Knight, 2015; George, 1990). Individual emotions are likely to be transferred to others in the group when emotional expressions, whether deliberately conveyed or not, concern attributes that other group members perceive as group-defining (Parkinson, Fischer, & Manstead, 2005). In the context of this study, team members are therefore likely to adopt emotions of others when the expressed emotions are related to an entrepreneurial role that is considered relevant for the team (Cardon et al., 2017).

Overall, TEP can thus be seen as a multiplicative construct reflecting the existence of collective positive feelings towards entrepreneurial activities that are central to the team's identity. And just as an individual can be passionate about one or multiple types of entrepreneurial activities (Cardon et al., 2009), also a team can display collective positive feelings for one or multiple meaningful entrepreneurial roles. In particular, a team is said to experience monofocal TEP if it experiences collective positive feelings for one primary entrepreneurial role, whereas polyfocal TEP reflects a situation in which a team is passionate about different entrepreneurial roles simultaneously (Cardon et al., 2017).

In line with prior research, we let our research question determine the choice of entrepreneurial roles incorporated in our study (e.g. Collewaert, Anseel, Crommelinck, De Beuckelaer, & Vermeire, 2016; Gielnik et al., 2015; Mueller, Wolfe, & Syed, 2017). Because of our specific interest in emerging new venture teams, we follow Gielnik et al. (2015) and investigate entrepreneurial roles related to inventing and founding activities. As such, we also remain consistent with recent findings of Santos and Cardon (2018) that emerging new venture teams are not yet engaged in activities related to growing and expanding the company. TEP for developing is therefore not relevant yet, and expressions related to TEP for developing can merely be seen as aspirations rather than reflections of actual collective positive feelings from being engaged in growth activities (Farmer, Yao, & Kung–Mcintyre, 2011). Hence, the focus of our study is on inventing and founding activities. Whereas an inventor role involves activities related to new product development and the search for new and disruptive opportunities in

the market, a founder role is characterized by activities related to the establishment of the venture and preparing the business for commercializing and exploiting opportunities. In this context of emerging new venture teams, we are interested in whether a team experiences collective positive feelings related to entrepreneurial activities, and if so, whether the team has a passion for inventing activities (monofocal TEP for inventing), for founding activities (monofocal TEP for founding), or for both (polyfocal TEP).

2.2 Team entrepreneurial passion, relationship conflict, and team performance

Cardon et al. (2017) have suggested that team entrepreneurial passion can lead to better-quality team processes, and thereby to better team performance. But while Santos and Cardon (2018) - in the only study that has so far empirically investigated TEP - find that TEP for inventing has a positive effect on team performance, they observe a negative (although insignificant) effect of TEP for founding. They further find that the positive effect of (monofocal) TEP for inventing on performance is reduced when the team also displays passion for an additional role (i.e., polyfocal TEP for inventing and founding or polyfocal TEP for inventing and developing), whereas the insignificant effect of (monofocal) TEP for founding on performance becomes significantly negative when combined with TEP for other roles (i.e., polyfocal TEP for inventing and founding or polyfocal TEP for founding and developing). In order to better understand these puzzling findings, and comprehend why and under which circumstances TEP is beneficial, we theorize that the link between TEP and team performance is mediated by relationship conflict, and that this mechanism differs according to the venture's development stage, as a result of different stakeholder interactions. In the following sections, we first argue that relationship conflict in a team will reduce team performance. We then explain that TEP will impact relationship conflict either negatively or positively, depending on whether the specific entrepreneurial activities the team is passionate about fit the venture's development stage.

2.2.1 Relationship conflict and team performance

Based on the new venture team literature, it can be argued that relationship conflict in a team reduces team performance. Relationship conflict is common in new venture teams (Steffens, Terjesen, & Davidsson, 2012) and has been proven to have troublesome consequences (Klotz et al., 2014). Vanaelst et al. (2006), for instance, have observed that interpersonal affective conflict is the main reason for team members to leave the venture. Moreover, relationship conflict has negative effects on the profit, sales, and growth of new ventures (Ensley & Pearce, 2001). Also, in the broader top management team literature, relationship conflict has been shown to be detrimental to a range of outcomes. It for instance reduces collaborative problem solving and team member satisfaction, team creativity and performance (De Dreu & Weingart, 2003; de Wit et al., 2012). In sum, it is generally accepted that relationship conflict has a negative impact on new venture team performance (Ensley & Pearce, 2001; Klotz et al., 2014).

2.2.2 TEP and relationship conflict

Relationship conflict is inherently affective in nature (Jehn & Mannix, 2001). It includes emotional disputes, tensions and frictions, and involves feelings such as frustration, irritation, and annoyance (Amason & Sapienza, 1997; Jehn & Mannix, 2001). It arises when individuals perceive themselves as different from and incompatible with other team members, which goes hand in hand with feelings of dislike and a lack of trust in the team (Amason & Sapienza, 1997; Li & Hambrick, 2005). We theorize that teams will to a different extent experience relationship conflict depending on whether team members jointly experience passion, and whether the focus of this TEP is aligned with the expectations of the external stakeholders they approach. We more specifically expect that TEP will differently relate to relationship conflict as a result of self-verification processes that occur when a team engages in social interactions with external stakeholders.

Based on identity control theory, prior research states that individuals or organizations attempt to validate their identity by looking for interactions with external actors that are expected to show a

similar focus¹ (Ashforth & Mael, 1996; Stryker & Burke, 2000). In other words, when a team for instance experiences TEP for inventing, and thus identifies with the inventor entrepreneurial role, it will seek relationships with stakeholders that are also focused on inventing, such as research institutes or grant administrators that fund technology development. A team that displays TEP for founding, however, will look for interactions with stakeholders that focus on launching and commercializing the product, such as customers, angel investors or venture capitalists.

This interaction triggers a process during which the team draws on input from these external parties to verify its role identity (Gioia, Schultz, & Corley, 2000; Stryker & Burke, 2000). As described in prior literature, "a role is a set of expectations prescribing behavior that is considered appropriate by others" (Hogg, Terry, & White, 1995, p. 257), and a role identity reflects the internalized meanings associated with that role (Burke & Reitzes, 1981). Stakeholder interactions serve as a basis for the team to assess whether its role identity - and thus its passion focus - is aligned with the reflected appraisals (i.e. the team's perception of what external parties consider appropriate behavior) (Gioia et al., 2000; Stryker & Burke, 2000). The outcome of this verification process can be twofold. The comparison can yield a sense of validation when the team's passion focus corresponds to the perceived external expectations, or a sense of rejection when the team perceives a mismatch between its passion focus and how it perceives the stakeholders' expectations (Corley & Gioia, 2004). We on the one hand expect that a team that experiences TEP towards a certain role will engage less in relationship conflict when it feels that the role it is passionate about is approved by its external stakeholders. On the other hand, perceived divergence between the focus of the team's passion and the perceived external expectations may prevent the team from leveraging their TEP, and increase relationship conflict instead. We explain these mechanisms in more detail below.

¹ Although this study develops insights at the level of early-stage new venture teams, the theoretical mechanism outlined in this section draws on prior research that assimilates insights from investigating identities at the organizational as well as the individual level (e.g. Corley & Gioia, 2004). In that respect, prior research states that an identity at a collective level can be treated "as an analogue of individual identity, drawing attention to the parallel functions identity plays for both individual and collective social actors" (Whetten, 2006, p. 219), and that collectives should be viewed "as actors in their own right, as *collective social actors*. They can take actions, utilize resources, enter into contracts, and own property" (Scott, 2003, p.7, italics added).

Stakeholders' validation. Prior research shows that when the expectations of significant others are aligned with an entity's identity, the entity feels more assured about its identity (Corley & Gioia, 2004). This secure sense of self enables favorable behavioral outcomes, such as more cooperative behavior and enhanced relationship quality (Ashforth & Schinoff, 2016; Swann, Johnson, & Bosson, 2009). We expect that in this case, TEP will reduce relationship conflict, because the team identity as well as the collective positive feelings related to this team identity increase perceived similarity and foster trust between the members of the new venture team (Amason & Sapienza, 1997; Li & Hambrick, 2005).

First, from an identity point of view, TEP serves as a common denominator. The team identity experienced towards a certain entrepreneurial role comes forth from a situation in which team members similarly realize that this role is meaningful and important to the team as a whole (Cardon et al., 2017). This common viewpoint leads them to perceive themselves as similar to each other, and as a result emphasize the common attributes in the team (Rink & Ellemers, 2007; Simon, Pantaleo, & Mummendey, 1995). Team members will for instance internalize the team's goals and communicate more openly to reach these goals (Han & Harms, 2010), which fosters trust and therefore reduces relationship conflict in the team (Li & Hambrick, 2005; McKnight, Cummings, & Chervany, 1998). Prior research, mainly conducted in operating firms, has found that team members tend to be more loyal, display more cooperative behavior, and avoid destructive conflict when they experience a team identity (Foo, Sin, & Yiong, 2006; Gundlach et al., 2006; Hinds & Mortensen, 2005).

Second, the literature on group affect argues that there will be "greater feelings of familiarity, attraction and trust" when a team experiences collective positive feelings (Barsade, Ward, Turner, & Sonnenfeld, 2000, p. 807). Walter and Bruch (2008) for instance argue that positive group affect reinforces and validates individuals' attitudes and beliefs, giving rise to feelings of attraction and liking, resulting in constructive interpersonal relations. Barsade et al. (2000, p. 805) describe the mechanism as follows: "I*feel* the same way you do (i.e. upbeat and energetic), which I find reinforcing, which makes me feel good, which then makes me attracted to you, which is then reciprocated by you" (italics in original). Consequently, team members feel more comfortable together, and the team

benefits from mutual trust, social integration, and reduced relationship conflict (Barsade, 2002; Walter & Bruch, 2008; Williams, 2001).

Stakeholders' rejection. On the other hand, when the team notices that it is passionate about a role that is questioned by external actors, the doubt and ambiguity following from these interactions are expected to prevent the team from leveraging the collective positive feelings they experience towards that role, but increase relationship conflict instead. Prior research shows that when a team is confronted with ambiguity following from external viewpoints that diverge from its own, team members are likely to feel a sense of frustration and anxiety (Fisher & Gitelson, 1983; Pearce & Ensley, 2004). This in turn leads to team members paying more attention to other members' deficiencies (Peterson & Behfar, 2003; Staw, Sandelands, & Dutton, 1981). As a result, team members have less faith in each other, and the emerged distrust induces relationship conflict (Amason & Sapienza, 1997; Li & Hambrick, 2005). Similarly, Gioia, Price, Hamilton, and Thomas (2010) describe that the rejection of an organization's identity leads to internal tensions. We therefore expect that TEP towards a certain entrepreneurial role will increase the level of relationship conflict when external stakeholders make clear that the activities the team is passionate about are not aligned with their expectations. In the next section, we explain that new ventures go through different development stages, and describe why it is important for our study to take these stages into account.

2.3 The role of TEP in different new venture development stages

New ventures typically progress through different development stages, each characterized by distinct challenges that need to be overcome to proceed into the next one (Fisher, Kotha, & Lahiri, 2016; Vohora, Wright, & Lockett, 2004). In order to tackle these challenges and achieve the goals of a given development stage, new ventures need to adapt their activities accordingly (Boeker & Wiltbank, 2005; Vohora et al., 2004). Kazanjian (1988), for example, identifies four development stages, each characterized by different goals and activities: (1) conception and development, (2) commercialization, (3) growth, and (4) stability. Because of our specific interest in emerging new venture teams, we limit

our discussion to the first two stages, which can be seen as the early stages of venturing (Koberg, Uhlenbruck, & Sarason, 1996). In the following sections, we describe for both the conception and the commercialization stage what the challenges and corresponding activities are, how these impact interactions with external stakeholders, and how all this influences the links between TEP for specific roles, relationship conflict, and team performance.

2.3.1 Conception stage

During stage one of Kazanjian's framework (1988), which we re-label the conception stage (Fisher et al., 2016), the goal is to identify a good product-market fit and to develop a working prototype. In order to achieve this goal, the venture primarily needs to engage in activities related to inventing the technology, developing the product or service, and on testing the potential strength of the business idea. Stakeholders that are generally interested in ventures in the conception stage, and thus expect to see these very early stage activities, are friends, family, grant suppliers and/or research institutes. They mainly pay attention to technological advancements and framing opportunities (Fisher et al., 2016; Pahnke, Katila, & Eisenhardt, 2015; Vohora et al., 2004), implying that their expectations are particularly in line with the inventor role, which according to Cardon et al. (2009) involves activities such as new product development and the exploration of new opportunities.

Since teams look for interactions with external audiences whom they expect to confirm their passion focus, teams that display TEP for inventing will approach the above-mentioned stakeholders, as they have a similar affinity with inventing activities. These stakeholders will indeed validate the team's focus on inventing activities, because they expect ventures in the conception stage to engage in these kinds of activities. As a result, teams that experience TEP for inventing in this early conception stage will perceive a social validation of their passion focus, enabling them to leverage their TEP and thus reduce the level of relationship conflict (as explained in section 2.2.2). As an example, during a round of exploratory interviews, a co-founder of a venture in the conception stage said:

"We want to focus on creating products. [...] Now we're developing a prototype [...] We're doing one thing at the time basically, and we're testing these ideas, and if we feel it doesn't work, then we stop it. [...] We get along super well. I think this common mindset really helps us to collaborate. [...] We developed the idea, which we submitted for some entrepreneurship thing at [the university], and it actually got some funding. And then we took this idea to [a start-up course at the university] to convince other people of our idea. And so it became the project as it is today."

This reflection clarifies that the team experienced better quality team processes thanks to the shared focus on inventing activities, and shows that the university validated this passion, as it provided financial support. The interviewee talks about the university's approval shortly after discussing how well the team gets along, suggesting that the external stakeholder support provided the necessary acknowledgment that enabled the team to leverage its TEP for inventing, and as such benefit from favorable team dynamics.

In sum, we expect that teams displaying TEP for inventing activities in the conception stage will perceive external validation from stakeholders who positively assess the fit between the team's focus on these specific activities and its development stage. This external approval will help the team to limit its engagement in relationship conflict. Given that prior research has already established a negative link between relationship conflict and team performance (as explained in section 2.2.1), we hypothesize that:

Hypothesis 1a: In the conception stage, TEP for inventing has an indirect positive effect on new venture team performance through reduced relationship conflict.

On the other hand, when a team experiences TEP for founding in the conception stage, it will look for stakeholders that focus on launching and commercializing the product, such as angel investors and venture capitalists (Fisher et al., 2016; Pahnke et al., 2015). These stakeholders, however, consider founding activities only relevant once the key objectives from the conception stage are accomplished, and the team has progressed into the commercialization stage (Fisher et al., 2016). They will thus perceive a mismatch between the team's passion focus and the venture's development stage, and will make this clear to the team. As a result, the team will perceive a rejection of its TEP, and the subsequent feelings of frustration and anxiety will lead to increased relationship conflict. This also became clear during an exploratory interview, when a co-founder of a blockchain start-up reflected on the difficulties his team had experienced when trying to raise funds for an initial coin offering (ICO):

"We always got the feedback of investors "you're a bit too early". We heard that over and over again, and to me that was kind of a message to step back a bit and work on the prototype again to be able to have something to show. [...] We had a lot of friction because of that. [...] We always wanted to push further and kind of start, but what I've learned [...] is really that you should take enough time to find your place and be really sure that this is the right way to go."

In other words, the mismatch between the stakeholder expectations and the team's passion focus is expected to increase relationship conflict amongst team members, and therefore also to hamper team performance. As a result, we hypothesize:

Hypothesis 1b: In the conception stage, TEP for founding has an indirect negative effect on new venture team performance through increased relationship conflict.

The prior hypotheses suggest that a team operating in the conception stage benefits from TEP for inventing, but experiences negative consequences from TEP for founding. As such, we expect to find different results for teams who experience monofocal TEP for inventing, monofocal TEP for founding, or polyfocal TEP for both roles. More specifically, we hypothesize that:

Hypothesis 1c: In the conception stage, monofocal TEP for inventing is better for reducing relationship conflict and enhancing team performance than polyfocal TEP for inventing and founding, which in turn is better than monofocal TEP for founding.

2.3.2 Commercialization stage

Once a team has successfully reached the objectives of the conception stage, it progresses into the commercialization stage (Kazanjian, 1988; Vohora et al., 2004). During this second stage, the goal is to launch the product or technology (Kazanjian & Drazin, 1990). To realize this objective, the venture needs to focus on improving the product and on learning how to commercialize it. Challenges in this stage are, for instance, starting the production of marketable products and intensifying marketing

efforts (Kazanjian, 1988; Kazanjian & Drazin, 1990). There are several types of stakeholders that typically show an interest in ventures that operate in this commercialization stage, such as early-stage investors and lead customers (Jawahar & McLaughlin, 2001). Each of these assess ventures through their own evaluative lens (Zhao, Fisher, Lounsbury, & Miller, 2017), and together they display a variety of expectations (Carter & Deephouse, 1999; Fisher, Kuratko, Bloodgood, & Hornsby, 2017).

For instance, angel investors and venture capitalists emphasize market positioning and the potential for future above-average financial returns (Fisher et al., 2016). The main objective of these investors for ventures in this stage is to start exploiting opportunities for economic gain, and they will oftentimes even take an advisory role to help portfolio ventures succeed in that aim (Fisher et al., 2016; Pahnke et al., 2015). In other words, these stakeholders expect new venture teams to focus on founding activities, which deal with preparing the venture for commercializing and exploiting opportunities (Cardon et al., 2009). Therefore, when a team in the commercialization stage displays TEP for founding, it will typically approach these early-stage investors, who in turn will confirm the fit between the team's focus on inventing activities and its development stage, enabling the team to leverage the TEP experienced, and thus display lower relationship conflict and perform better.

At the same time, lead customer acceptance is key to generating a continuing cash flow, and thus a cornerstone for progressing through the commercialization stage and building legitimacy towards a larger target market as well as towards resource providers (Jawahar & McLaughlin, 2001; Shepherd & Zacharakis, 2003). Lead customers predominantly pay attention to the product features, and typically provide feedback on the technical specifications as well as on their willingness to buy the product (Carter & Deephouse, 1999; Coviello & Joseph, 2012). They thus expect a new venture team to engage in inventing activities, as to improve and fine-tune the venture's offer (Cardon et al., 2009). A team with TEP for inventing, operating in the commercialization stage, will therefore sense a validation of its passion focus when it interacts with lead customers. This TEP is therefore expected to reduce relationship conflict, allowing the team to enhance its performance.

In sum, in the commercialization stage, both TEP for inventing and TEP for founding will lead to stakeholder interactions that result in the social validation of a team's passion focus, because stakeholders see a fit between the venture's development stage and inventing as well as founding activities. We therefore expect that both TEP for inventing and TEP for founding will reduce relationship conflict and thus enhance performance, and hypothesize that:

Hypothesis 2a: In the commercialization stage, TEP for inventing has an indirect positive effect on new venture team performance through reduced relationship conflict.

Hypothesis 2b: In the commercialization stage, TEP for founding has an indirect positive effect on new venture team performance through reduced relationship conflict.

We further expect that teams who display TEP for inventing and founding simultaneously, and thus experience polyfocal TEP, will benefit more from their jointly experienced passion compared to teams that display monofocal TEP for one of these roles, as teams with polyfocal TEP are aligned with a broader set of stakeholder expectations, and perceive social validation for multiple dimensions of their TEP. Prior research argues that an entity will see its multiple, co-activated role identities as compatible when the different identities are all acknowledged by significant others (Ramarajan, Rothbard, & Wilk, 2017; Rothbard & Ramarajan, 2009). This perceived compatibility between different identities has been found to strengthen the outcomes of the identities even more, and thus to elicit positive emotions and improve interpersonal relations toward one another (Greenhaus & Powell, 2006; Ramarajan, 2009). We therefore hypothesize that:

Hypothesis 2c: In the commercialization stage, polyfocal TEP for inventing and founding is better for reducing relationship conflict and enhancing team performance than monofocal TEP for either inventing or founding.

3 Method

3.1 Context

In order to gain a better understanding of the phenomenon under study, we obtained diverse and rich data from new venture teams that participated in an annual start-up competition in Switzerland between

2017 and 2018. The contest was open to young start-ups from all sorts of industries, and was publicly known for its focus on technology. Entrepreneurs and teams of entrepreneurs were allowed to participate if at least one team member was a Swiss resident.

All start-ups that registered for the competition could benefit from a five-month program of support events and coaching. Participants could choose between two competition tracks, "business ideas" or "business plans", according to the development stage of their venture. Start-ups were advised to enter the business idea track if they had an initial business idea and felt the need for a professional reality check. In general, these start-ups were in the process of developing and fine-tuning a prototype. For them, the focus of the program was on specifying the customer benefit and working towards a productmarket fit. The business plan track, on the other hand, targeted start-ups that already had a clearer understanding of the market. In this track, the focal point of the program was on establishing an actionable roadmap and preparing the start-ups for communicating with strategic partners. Two months after the program had started, participants of the business idea track had to submit a two to six-page summary of the idea. Participants of the business plan track were expected to hand in a business plan of 20 to 30 pages. The start-ups decided themselves in which competition track they participated, and could alter their competition track until the submission deadline. The contest organizers, however, guided start-ups towards the most suitable competition track in several ways. First, the two competition tracks offered different incentives, tailored to the development stage of the participating start-ups. In the business idea track, the contest only offered prizes to the start-ups that were ranked in the top five of that track. The five winning start-ups received cash prizes up to 15,000 CHF². Furthermore, the same start-ups gained a "consulting package" from a renowned consultancy firm, and they battled for the contest's audience award, which was broadcasted by the national television and radio company. In the business plan track, the first 25 start-ups were invited to pitch for a large pool of different types of investors. Furthermore, the five winning start-ups gained cash prizes up to 60,000 CHF, and received media attention from the written press in Switzerland. Furthermore, as another measure to ensure that

 $^{^2}$ In 2017 and 2018, the value of 1 CHF ranged between 0.985 and 1.084 USD.

start-ups participated in the right track, the contest organizers browsed through all submitted documents upon the registration deadline and redirected start-ups to the other track if there was a mismatch between the start-up's development stage and the chosen track. The contest organizers' rigorous approach assures that the competition track truly reflects the development stage of the ventures.

Over the two years, the competition had a total of 483 participating start-ups, out of which 396 submitted a document by the time of the deadline and were thus considered during the evaluation process of the competition. These 396 start-ups (51% in the business idea track, 49% in the business plan track) were the focus of our data collection.

3.2 Data

The data for this study stem from different sources. First, we rely on competition scores determined by jury assessments as an indication of team performance. In our section about quantitative measures, we explain how we used these assessments to calculate the dependent variable. Furthermore, we rely on survey data obtained from the new venture team members. From the total number of 396 start-ups that submitted a document in the competition, 442 individual entrepreneurs from 254 start-ups provided us with their insights. After eliminating 80 solo entrepreneurs, and 88 teams for which not all members had responded, our final sample consists of 86 teams, representing data of 219 individuals in total. On average, respondents filled out the survey 24 days before the jury assessments were made available on the online platform of the contest.

In order to assure that the data collection was not impacted by non-response bias or sample selection bias, we compared our final sample with (a) other participants that enrolled for the contest, and (b) government data on a broader representative sample of 1,593 hi-tech Swiss start-ups (Grichnik, Vogel, & Burkhard, 2016). None of the analyses revealed significant differences, indicating that our final sample is representative for the broader population of early-stage hi-tech start-ups in Switzerland³.

³ The detailed analyses are available from the authors upon request.

3.3 Quantitative measures

3.3.1 Team performance

For each team, performance is measured by how well it scored in the start-up competition. The contest's jury consisted of carefully selected individuals, ranging from experienced entrepreneurs, over senior consultants, seed and early stage investors, to authorities in the start-up ecosystem. Over the two years, a total of 211 judges were involved, out of which 153 judges evaluated start-ups from our final sample of 86 teams. Judges were instructed to evaluate submitted documents using confidential, standardized templates on the online platform of the contest. They were only assigned to documents within one track (business ideas or business plans). Furthermore, the contest organizers used an algorithm to allocate judges to start-ups, which took into account the start-ups' industry sector, the judges' expertise and potential conflict of interest. Judges rated different aspects of a submitted document with "not covered", "very poor", "poor", "fair", "good", or "very good", and supplemented the chosen option with written feedback. The rating of each evaluation criterion was automatically translated into a score ranging from 0 (not covered) to 5 (very good), after which the scores of all criteria were summed and scaled to a score with a minimum of 0 and a maximum of 100. In addition, if a judge considered a submission a potential winner, (s)he could check a box, resulting in 20 extra points. The maximum score that could be obtained was therefore 120. For each team, their submitted document was evaluated by two to four jurors, depending on which round the team reached in the contest. In a first round, each submission was separately evaluated by two judges. Afterwards, the average score of these evaluations was used to establish a ranking of all submissions. In both the business idea and business plan track, start-ups passed onto the second round if their submission was ranked amongst the top 50% of their track. In the second round, the submission was again evaluated by two other judges, who had not been judges in round one. In the end, the final competition score was determined by averaging all evaluations a certain start-up had received. This calculation is justified, as the intraclass correlation coefficient ICC(K) was 0.70, indicating that the mean rating assigned by a group of judges was reliable (LeBreton & Senter, 2008). In our sample, the final competition score ranges between 15.0 and 111.5, with an average score of 71.14 (Shapiro-Wilk normality test=0.983, p=0.331; kurtosis=0.383, skewness=-0.114). For the remainder of this paper, this final competition score reflects our conceptualization of team performance. Although judges evaluated the start-ups based on a written document rather than on observations directly related to the new venture team, our operationalization is deemed appropriate, as prior research states that a company's strategic choices and performance levels are reflections of its top management team (Hambrick, 2007; Hambrick & Mason, 1984). Scholars argue this is even more so for new venture teams, because "the influence of their inputs, processes, and emergent states on firm performance is likely clearer and more direct than for executive teams leading large, established firms" (Klotz et al., 2014, p. 245). Furthermore, given that we focus on emerging new ventures, performance measures such as sales growth or return on assets are not relevant in the context of this study (Jin, Madison, Kraiczy, Kellermanns, Crook, & Xi, 2017). This externally determined competition score therefore provides a good alternative.

3.3.2 Relationship conflict

Relationship conflict was measured using the widely accepted items of Jehn and Mannix (2001). Respondents indicated the level of relationship conflict in the team by responding to three survey items (Cronbach's alpha = 0.867), such as "How much relationship tension is there in the team?" (Jehn & Mannix, 2001). Answers were measured on a 7-point Likert scale, ranging from "none" to "a lot" (Jehn, Northcraft, & Neale, 1999). The individual's perception of relationship conflict in the team was obtained by averaging the answers of the three items. Afterwards, we averaged the individual results to obtain team-level relationship conflict. This aggregation is justified, as the within-group agreement measure $r_{wg(J)}$ for relationship conflict is 0.83, and thus surpasses the minimum acceptable value of 0.7 (James, Demaree, & Wolf, 1984).

3.3.3 Team entrepreneurial passion

To measure TEP, we followed Santos and Cardon (2018), who shifted the reference point of the entrepreneurial passion scale of Cardon, Gregoire, Stevens, and Patel (2013) from the individual to the

team level, meaning that respondents were asked to evaluate the statements baring the team in mind rather than themselves as an individual (see Table A.1 in Appendix A) (Chan, 1998; Santos & Cardon, 2018). Following Santos and Cardon (2018), respondents were inquired about their team identity (TI) related to each entrepreneurial role (inventor, founder), as well as the team's collective positive feelings (CPF) experienced related to each role. Parallel to Santos and Cardon (2018), and to the original scale of Cardon et al. (2013), team identity was measured using one item per entrepreneurial role. For instance, to indicate the importance of inventor activities to the team, all team members answered the item "inventing new solutions to problems is an important part of who we are as a team" on a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree" (Cardon et al., 2013; Cardon et al., 2017). Furthermore, in line with Santos and Cardon (2018), the extent to which the team experienced collective positive feelings related to inventor activities was measured through four items (Cronbach's alpha = 0.863), and collective positive feelings related to founder activities were measured using three items (Cronbach's alpha = 0.906). The individual's perception of the team's collective positive feelings towards an entrepreneurial role was calculated by averaging the corresponding collective positive feeling items.

To analyze TEP at the team level, team member responses of each subscale were averaged to obtain the team-level score. Here as well, the aggregation is justified, as the within-group agreement measure $r_{wg(J)}$ scored higher than 0.7 for each subscale (James et al., 1984). The scores were as follows: $r_{wg(J)-TI_inv} = 0.85$ for the centrality of the inventor role in the team identity; $r_{wg(J)-CPF_inv} = 0.91$ for the collective positive feelings towards the inventor role; $r_{wg(J)-TI_ifnd} = 0.75$ for the centrality of the founder role in the team identity; and $r_{wg(J)-CPF_ifnd} = 0.91$ for the collective positive feelings towards the founder role. Given that TEP is conceptualized as an interaction between team identity and collective positive feelings, we multiplied both team-level constructs to obtain the final TEP score for each entrepreneurial role (see also Cardon & Kirk, 2015, and Drnovsek et al., 2016 for a likewise operationalization at the individual level). This multiplication resulted in the variables TEP for inventing and TEP for founding.
3.3.4 Venture stage

We used the competition track to measure the stage of the venture, with the business idea track representing the conception stage and the business plan track reflecting the commercialization stage. The variable venture stage received the value 0 if the venture participated in the business idea track, and the value 1 if the venture participated in the business plan track. 45 out of 86 teams participated in the business idea track; the other 41 joined the business plan track. We consider this a better measure for venture stage than venture age for two different reasons. First, start-ups involved in the competition are active in different industries. As the lead-time to market differs between industries (e.g. it typically takes much longer to take a pharmaceutical drug to the market than to launch a software application), a venture's age is likely to reflect a different development stage depending on industry. Second, this study focuses on nascent ventures, including venture age based on incorporation date. We decided to include nascent ventures that are not incorporated yet, because of our specific interest in early-stage new venture teams. Overall, in line with Klotz et al. (2014), we avoid setting boundary conditions that are context-specific (e.g. industries that are characterized by different complexity and technological intensity).

3.3.5 Control variables

In the regression equation determining team performance, we controlled for *industry sector*. Similar as in previous research, we took into account that the competitiveness and turbulence of an industry influence the performance of new ventures (e.g. Beckman, Burton, & O'Reilly, 2007; Brannon, Wiklund, & Haynie, 2013). In order to limit the number of variables in our model, we clustered teams in our sample into three industries, and operationalized the variable industry sector as two dummy variables: (1) healthcare and life sciences (23.3%), and (2) software, hardware and ICT (39.5%), scoring the value of 1 when the team operated in the respective industry sector, and 0 otherwise. The baseline category contained all other industries (37.2%) (commercial and financial services; consumer goods; industrial sector, utilities and transportation).

Upon predicting relationship conflict, we controlled for team diversity and team size in our analyses, as prior research shows that these can lead to relationship conflict (e.g. Amason & Sapienza, 1997; Choi & Sy, 2010; Horwitz & Horwitz, 2007; Jehn et al., 1999; Mooney, Holahan, & Amason, 2007; Pelled, Eisenhardt, & Xin, 1999). First, we incorporated a variable measuring the *functional diversity* in the team, consisting of four dimensions: diversity in degree level, degree area, years of working experience and area of working experience. Individual survey responses were combined to obtain the team-level diversity score for each of the dimensions. In accordance to the suggestions of Harrison and Klein (2007), we used the most appropriate operationalization for each diversity measure. Variety in degree area and variety in area of working experience were measured using the Blau's index, calculated as $1 - \Sigma p_i^2$, with p the proportion of team members in the ith category (Blau, 1977). Disparity in degree level was operationalized through the coefficient of variation. Diversity in years of working experience was conceptualized as a separation measure, reflected by the standard deviation (we refer to Harrison and Klein (2007) for a detailed explanation). Following Hmieleski and Ensley (2007), we combined the four measures to create an overall index of functional diversity. In order to obtain this final score, we averaged the four measures after having standardized them. Second, we also included a variable representing *demographic diversity* in a team. In order to obtain this variable, we combined gender (Blau's index) and age diversity (standard deviation) (Chowdhury, 2005; Hmieleski & Ensley, 2007; Pelled et al., 1999), by averaging the standardized scores of both measures. Third, we controlled for team size, as prior research reports an augmenting effect on relationship conflict (Amason & Sapienza, 1997; de Jong, Song, & Song, 2013; Mooney et al., 2007). Finally, we took into account whether a team participated in the competition in 2017 or 2018, and labeled this variable *cohort*.

4 Results

In this section, we first discuss the appropriateness of our measurement model. We subsequently explain our analytical approach, consisting of a linear multi-group mediation model, and a polynomial multi-group mediation model with response surface analysis. Afterwards, we report the findings per

development stage, and conclude the results section with several additional tests and robustness checks.

4.1 Measurement model

Table 1 presents the descriptive statistics and correlations of the variables included in further analyses. Given that our data contain observations of individual entrepreneurs within teams, we first examined the intraclass correlation coefficient (ICC) of each survey item to test whether the clustered nature of the data (entrepreneurs in teams) required us to apply multilevel techniques (Preacher, Zyphur, & Zhang, 2010). ICCs ranged from 4.43% to 44.73%, meaning that a considerable proportion of the variance in the items is caused by differences across teams. Given that the ICC value of 11 out of 12 variables exceeded the threshold of 5%, we decided to test the discriminant validity of the multi-item constructs by performing a confirmatory factor analysis with cluster-robust standard errors (Preacher et al., 2010). That way, both the individual-level and team-level variances are taken into account (McNeish, Stapleton, & Silverman, 2017). Similar as in prior empirical research on entrepreneurial passion, the items related to identity centrality were not included in the analysis (Cardon & Kirk, 2015). As emphasized by Hair, Black, Babin, and Anderson (2013), good practice dictates a minimum of three items per factor. Hence, we conducted a cluster-robust CFA with the items reflecting collective positive feelings towards inventor activities (factor 1), collective positive feelings for founder activities (factor 2) and relationship conflict (factor 3). The three-factor model resulting from the CFA, displayed in Table 2, provided highly significant factor loadings (p<0.001), and showed an adequate fit to the data ($\chi^2_{(31)}$ =41.092; p=0.106; CFI=0.987; TLI=0.981; RMSEA=0.039; SRMR=0.034) (Hair et al., 2013). This three-factor model fitted the data significantly better than did all possible two-factor models ($\Delta \chi^2_{(2)} \ge 42.7$; p<0.001) and the one-factor model ($\Delta \chi^2_{(3)} = 125.0$; p<0.001), supporting the discriminant validity of the theoretical constructs.

- [INSERT TABLE 1 AND 2 ABOUT HERE] -

4.2 Hypothesis testing

4.2.1 Analytical approach

In order to test our hypotheses, we used the lavaan package in R (Rosseel, 2012) to specify two different structural equation models with parceled team-level variables (Yang, Nay, & Hoyle, 2010). Hypotheses 1a, 1b, 2a, and 2b were tested by means of a linear multi-group mediation model (Edwards & Lambert, 2007). In other words, we specified one model that estimates the effects of TEP for inventing and TEP for founding on team performance through relationship conflict in both venture development stages separately. For the ease of interpretation and to avoid multicollinearity, we meancentered the continuous independent variables before inserting them into the model (Kraemer & Blasey, 2004). As the endogenous variable relationship conflict is not normally distributed and rightskewed (Shapiro-Wilk normality test = 0.8718, p<0.001; kurtosis = 3.883, skewness = 1.197), we estimated the model with robust (Huber-White) standard errors to account for multivariate nonnormality in the data (Finney & DiStefano, 2013). The fit indices of the linear multi-group mediation model demonstrate that the model fits the data very well ($\chi^2_{(12)}$ =12.939; p=0.374; CFI=0.982; TLI=0.949; RMSEA=0.043; SRMR=0.036) (Hair et al., 2013; West, Taylor, & Wu, 2012). Table 3 reports the standardized coefficients, standard errors and p-values of the hypothesized structural relationships in both development stages. Furthermore, we assessed the presence of indirect effects through the bias-corrected bootstrap method (5,000 iterations). This approach allowed us to test the significance of the indirect effects without the need to make assumptions about the central tendency of the estimates of these effects (MacKinnon, Lockwood, & Williams, 2004; Preacher, Rucker, & Hayes, 2007). The results of the bootstrap analyses are displayed in Table 4.

In order to test hypotheses 1c and 2c, and thus to get a better understanding of how relationship conflict and team performance are affected by monofocal versus polyfocal TEP, we conducted a polynomial multi-group mediation analysis, and analyzed response surface plots for both development stages (Edwards & Parry, 1993; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). As Shanock et al. (2010) explain, this approach is especially informative when one wants to "examine the extent

to which combinations of two predictor variables relate to an outcome variable, particularly in the case when the discrepancy (difference) between the two predictor variables is a central consideration" (we refer to Shanock et al., 2010 and Edwards & Parry, 1993, for more details about the technique).

Following the procedure of Shanock et al. (2010), we first verified and confirmed that the subsamples (teams in the conception stage, and teams in the commercialization stage) comprise a sufficient proportion of teams for which TEP for inventing and TEP for founding are aligned and a sufficient proportion of teams for which the variables diverge (see Appendix B for details), as this is a requirement for conducting polynomial analysis. In line with Shanock et al. (2010) and Edwards (2007), we then centered TEP for inventing and TEP for founding around the midpoint of their scales. Given that both TEP variables were computed by multiplying team identity and collective positive feelings, their scales ranged from 1 to 49. As the midpoints of these scales are debatable⁴, we first transformed⁵ them to scales ranging from 1 to 7, and afterwards centered them around their midpoint or 4. We modelled a multi-group mediated path analysis with polynomials (i.e. the two midpoint-centered TEP variables, their squared values, and their cross-product) in the equation estimating relationship conflict, and the same control variables as in our linear multi-group mediation model⁶. The model, reported in Table 5, returned excellent model fit ($\chi^2_{(22)}$ =15.338; p=0.847; CFI=1.000; TLI=1.187; RMSEA=0.000; SRMR=0.034) (Hair et al., 2013; West et al., 2012).

In order to interpret the output of the polynomial mediation in function of our hypotheses, we plotted the results in three-dimensional graphs (Fig. 1 and 2), and analyzed different test statistics (Table 5 to 7). First, in order to compare the effects of monofocal TEP for inventing on relationship conflict and team performance with those of monofocal TEP for founding, we relied on surface values that reflect the slope and curvature of the line of incongruence (i.e. the diagonal between monofocal TEP for inventing and monofocal TEP for founding) (Shanock et al., 2010). The curvature surface value

⁴ The metric midpoint of the scale equals 25, while the product of the sub dimensions' midpoints is 4x4=16.

⁵ The transformation was computed as $x_{new} = (max_{new} - min_{new})*(x_{old} - min_{old})/(max_{old} - min_{old}) + min_{new}$, with x = observation, max = scale maximum, min = scale minimum (Aiken, 1987).

⁶ Based on the results of the multi-group mediation model, that reports insignificant direct effects from both TEP variables on team performance in both development stages, we opted to specify a fully mediated polynomial model. That way, we were able to limit the number of independent variables in the model.

examines whether the outcome (relationship conflict or team performance) increases (positive value) or decreases (negative value) more sharply as the degree of discrepancy between both predictors increases. The slope surface value is significant if the outcome is higher when the discrepancy is such that TEP for inventing exceeds TEP for founding (positive slope), or vice versa (negative slope). Second, we examined the slopes of the relevant conditional direct and indirect effects to investigate whether the impact of polyfocal TEP differs from the impact of monofocal TEP (for inventing or founding) (Preacher et al., 2007). For instance, whereas both polyfocal TEP and monofocal TEP for inventing are characterized by high TEP for inventing, the former type of passion also comprises TEP for founding while the latter type of passion implies the absence of TEP for founding. To compare both types of TEP, we thus need to evaluate the change in outcome variable for an increase in TEP for founding, conditional on a high level of TEP for inventing. We hereafter outline the results per development stage.

- [INSERT TABLE 3 AND 4 ABOUT HERE] -

4.2.2 Conception stage

Our linear multi-group mediation model (Table 3) shows that, in the conception stage, TEP for inventing has a significantly negative effect on relationship conflict (β =-0.712; p=0.000), while TEP for founding significantly increases relationship conflict (β =0.339; p=0.007). At the same time, there are no significant direct effects of TEP for inventing or TEP for founding on team performance (β =-0.144; p=0.558 and β =-0.031; p=0.831, respectively). The results also surprisingly reveal that there is no significant link between relationship conflict and team performance in this development stage (β =-0.105; p=0.625). Given this insignificant effect of relationship conflict on team performance, the bootstrap analysis (Table 4) reports insignificant indirect effects of both TEP for inventing and TEP for founding on team performance via relationship conflict (β =0.075; se=0.415; 95% C.I. [-0.439, 0.213], respectively). Hypotheses 1a and 1b are

therefore not fully supported, even though the findings related to the links between the TEP variables and relationship conflict confirm our theorizing.

The polynomial multi-group mediation model (Table 5 and 6) and accompanying response surface analysis (Fig. 1 and Table 7) provide more insights into whether the effects of monofocal TEP for inventing, monofocal TEP for founding and polyfocal TEP differ. First, the line of incongruence on Fig.1-A shows that relationship conflict increases more sharply when the degree of discrepancy between TEP for inventing and TEP for founding increases ($a_4=1.064$; p=0.004), and that relationship conflict is higher when the discrepancy is such that TEP for founding exceeds TEP for inventing $(a_3 = -$ 2.936, p=0.000). Fig.1-B, however, shows that team performance is not (indirectly) influenced by the discrepancy between TEP for inventing and TEP for founding (a_4 =-0.233, p=0.953; a_3 =0.643, p=0.904). In other words, while monofocal TEP for inventing is better for reducing relationship conflict than monofocal TEP for founding, the distinction does not hold when looking at their indirect effects on team performance. Second, the conditional effects of the polynomial model (Table 5 and 6) show that polyfocal TEP reduces relationship conflict significantly more than does monofocal TEP for founding (b=-2.948, p=0.000), whereas the difference is again not significant when team performance is the outcome (b=0.646; se=7.289; 95% C.I. [-13.755, 15.976]). At the same time, there is no significant difference between the effect of polyfocal TEP versus monofocal TEP for inventing on relationship conflict (b=-0.137, p=0.569), nor indirectly on team performance (b=0.030; se=0.992; 95% C.I. [-1.676, 2.311]).

In sum, whereas monofocal TEP for inventing and polyfocal TEP are better for reducing relationship conflict than monofocal TEP for founding, there are no significant differences between the three types of TEP for the indirect effects on team performance. Hypothesis 1c is therefore only partly confirmed.

– [INSERT TABLE 5 AND 6 ABOUT HERE] – – [INSERT FIG. 1 ABOUT HERE] –

4.2.3 Commercialization stage

For teams in the commercialization stage, the linear multi-group mediation model (Table 3) reveals no significant direct effects of TEP for inventing or TEP for founding on team performance (β =0.044; p=0.794 and β =-0.195; p=0.178, respectively). Furthermore, in line with prior research (de Wit et al., 2012; Ensley & Hmieleski, 2005; Ensley & Pearce, 2001), team performance is significantly hampered by relationship conflict for teams in this stage (β =-0.343; p=0.004). But although both TEP for inventing and TEP for founding are negatively related to relationship conflict, these linear effects are not significant (β =-0.141; p=0.440 and β =-0.227; p=0.223, respectively). Hence, the bootstrap analysis (Table 4) also returns insignificant indirect effects of TEP for inventing or TEP for founding on team performance via relationship conflict (β =0.048; se=0.229; 95% C.I. [-0.234, 0.719] and β =0.095; se=0.272; 95% C.I. [-0.178, 0.889], respectively), and hypotheses 2a and 2b cannot be fully confirmed.

However, the polynomial multi-group mediation model (Table 5 and 6) and response surface analysis, illustrated in Fig.2-A and 2-B, reveal that the effects of TEP for inventing and TEP for founding on relationship conflict and team performance are non-linear. First, although the curvature along the incongruence line on Fig.2-A is significantly positive (a_4 =1.560; p=0.016), the slope is insignificant (a_3 =0.081, p=0.897). This provides evidence that an increase in discrepancy between TEP for inventing and TEP for founding leads to a sharper increase in relationship conflict, yet the level of relationship conflict does not differ significantly depending on whether TEP for inventing exceeds TEP for founding or vice versa. Similarly, the incongruence line on Fig.2-B shows a concave surface, meaning that team performance reduces with higher discrepancy between both predictor variables (a_4 =-10.250; p=0.006). Also team performance does not differ significantly depending on whether TEP for inventing is higher than TEP for founding or vice versa (a_3 =-0.531, p=0.939). In other words, there is no significant difference between monofocal TEP for inventing and monofocal TEP for founding when it comes to reducing relationship conflict or enhancing performance. Second, the conditional effects of the polynomial model (Table 5 and 6) show that relationship conflict is significantly more reduced by polyfocal TEP than by monofocal TEP for inventing (b=-2.271, p=0.004) or monofocal TEP for founding (b=-2.013, p=0.018). At the same time, polyfocal TEP has a more positive indirect effect on team performance than monofocal TEP for inventing (b=14.917; se=10.486; 95% C.I. [0.454, 45.079]) and monofocal TEP for founding (b=13.222; se=10.919; 95% C.I. [-0.137, 46.080]), with the latter difference being only marginally significant however.

Overall, these results support hypothesis 2c that, for teams in the commercialization stage, polyfocal TEP is better for reducing relationship conflict and increasing team performance than monofocal TEP for either inventing or founding, while there is no significant difference between the effects of the latter two types of TEP.

– [INSERT FIG. 2 ABOUT HERE] –– [INSERT TABLE 7 ABOUT HERE] –

4.3 Additional analyses and robustness checks

4.3.1 Common method bias

First, we avoided common method bias in estimating our dependent variable by measuring team performance based on jury assessments (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Furthermore, to ensure that the relationships between our independent variables and our mediator were not subject to common method bias, we on the one hand guaranteed confidentiality to the participants and on the other hand assessed the presence of common method variance through partial correlation analysis using a marker variable, as outlined by Lindell and Whitney (2001). Respondents reported to which extent they envisioned their company as a means to advance a societal cause on five different 7-point Likert scale items (Sieger, Gruber, Fauchart, & Zellweger, 2016). We used the team-level average of this construct as the marker variable, as we do not expect it to be related to the variables in our study (Lindell & Whitney, 2001). All previously significant zero-order correlations remained significant when adjusting for partial correlation, indicating that our analyses are not affected by a common method bias (Lindell & Whitney, 2001).

4.3.2 Multicollineartiy

Second, to evaluate the presence of multicollinearity in our models, we calculated variance inflation factors (VIFs) (Kline, 2015). For the linear multi-group mediation model, all VIFs (\leq 2.876) were well below the critical threshold of 10 mentioned in the literature (Hoyle, 2014; Kline, 2015). For the polynomial multi-group mediation model, all VIFs for the independent variables in the model without the quadratic and interaction terms are 1.198 or below, which suggests that collinearity is unlikely to be a problem for our estimates⁷.

4.3.3 Endogeneity

Third, we carefully paid attention to potential endogeneity in our model that may be caused by reverse causality (Kline, 2015). Although performance was measured at a later point in time, and through a different source than the TEP variables and relationship conflict, one could question whether TEP influences relationship conflict and performance, or whether a reverse causal relationship could equally hold. We follow the theorizing of Cardon et al. (2017), who argue that TEP influences the quality of team processes and team performance. Yet, as also explained in that same article, it can indeed be expected that the process of emergence and consequences of TEP is subject to feedback loops. This means that team processes and performance may, *over time*, influence individuals' experience of passion via top-down affective and identity processes, and the diversity of these individual-level passions may in turn influence TEP via bottom-up affective and identity processes. As such, we believe that we should not rule out the theoretical possibility of feedback loops, but instead carefully test whether the results of our models are biased by potential endogeneity. In order to alleviate these concerns, we applied the Model Implied Instrumental Variable, Two Stage Least Squares (MIIV-2SLS) estimator, using the recently developed MIIVsem package in R (Fisher, Bollen, Gates, &

⁷ For the polynomial model, we followed the advice of Edwards (2007) and Shanock et al. (2010) to midpoint-center the predictors of interest rather than to mean-center them. Given that both TEP variables are left skewed, the mid-point centered variables show primarily positive observations, and the lower-order effects are consequently highly correlated with the quadratic and interaction effects. As a result, the model including these higher-order terms displays several high VIFs. As discussed by Allison (2012), and iterated by other scholars (Aguinis, Edwards, & Bradley, 2017; Allen, Chandrasekaran, & Basuroy, 2018), inflated VIFs due to adding higher-order terms do not introduce a threat to valid estimation and interpretation, but are artifacts of the rationale behind VIFs. As the correlation between the two predictors is as such that the VIFs in the model without the quadratic and interaction terms are substantially below the threshold of 10, we can safely argue that multicollinearity is not an issue.

Rönkkö, 2017). The technique tests whether a model is subject to misspecifications, allowing us to apply a two-stage model on multiple equations simultaneously (Bollen, 2018). Furthermore, the MIIV-2SLS approach finds the instruments among the observed variables that are already part of the model (Bollen, 1996). An observed variable can serve as a MIIV if it is uncorrelated with the error term of the equation concerned (we refer to Bollen, 2018 for an overview of the technique). Similar to other 2SLS approaches, the Sargan (1958) test statistic is calculated, in this case for each equation in the model. This test verifies the null hypothesis that all MIIVs are uncorrelated with the equation's composite error. One would find proof of structural misspecifications in case the null hypothesis would be rejected. In our analyses, the tests did not provide any evidence of misspecification, neither in the linear model (conception stage: $T_s_RC(2)=1.187$, p=0.552; $T_s_Perf(4)=1.351$, p=0.853; commercialization stage: $T_s_RC(2)=1.517$, p=0.468; $T_s_Perf(9)=2.847$, p=0.970; commercialization stage: $T_s_RC(2)=2.193$, p=0.334; $T_s_Perf(9)=6.861$, p=0.652). This strengthens our argument that our models are not subject to endogeneity-related biases.

4.3.4 Robustness checks

We computed several models with different specifications as robustness checks for the linear as well as for the polynomial multi-group mediation model. First, given that the linear model revealed insignificant direct effects of both TEP for inventing and TEP for founding on team performance, we also computed a fully mediated model removing the direct effects from the model. This model returned equally good fit measures, and provided the same conclusions. Similarly, we ran a robustness test adding direct effects of TEP for inventing and TEP for founding on team performance to the polynomial model. The results of this model are in line with the reported polynomial model, with comparable fit measures. Second, for both the linear and the polynomial model, we estimated alternative specifications including all control variables (team size, functional diversity, demographic diversity, cohort, and industry) in the equation estimating team performance, resulting in the same conclusions and equally good fit measures as the reported models. Third, we performed robustness checks using only the scores of the first evaluation round (excluding those of the second evaluation round) as a measure for team performance. Both for the linear and the polynomial mediation, the alternative model returned the same results as the reported model, with similarly good fit measures. Fourth, we controlled whether the level of relationship conflict or team performance differed between teams with or without prior start-up experience, which turned out not to be the case. And finally, we verified whether TEP is the adequate measure when analyzing the level of relationship conflict and performance of a new venture team, or whether there may be alternative explanations. During our data collection, we also gathered information about the individual-level entrepreneurial passions. We therefore investigated whether relationship conflict and team performance could be explained by diversity in individual entrepreneurial passions, but both the linear and the polynomial multi-group mediation models showed poor fit (e.g. CFI_{linear}=0.855, and CFI_{polynomial}=0.592).

5 Discussion and conclusion

This study had the aim to disentangle the effects of TEP on team performance by investigating the mediating effect of relationship conflict, and the moderating effect of venture development stage. Overall, our findings indicate that TEP towards different entrepreneurial activities has a different impact on relationship conflict and team performance depending on whether approached stakeholders see a fit between the specific activities the team is passionate about and the venture's development stage. For ventures in the conception stage, our results show that teams engage in less relationship conflict when they experience monofocal TEP for inventing or polyfocal TEP for both inventing and founding, but show increased relationship conflict when they display monofocal TEP for founding. For teams in the commercialization stage, TEP for inventing and TEP for founding reduce relationship conflict and enhance performance in a non-linear way. In this stage, teams engage in considerably less relationship conflict, and therefore perform better, when they experience polyfocal TEP, compared to

when they experience monofocal TEP for inventing or monofocal TEP for founding. Our findings have several important theoretical and practical implications.

5.1 Theoretical implications

First and foremost, this study contributes to the literature on entrepreneurial passion by examining the impact of team-level passion on team processes and performance. This is important because prior research has extensively shown that entrepreneurial passion impacts how an individual entrepreneur acts (Cardon & Kirk, 2015; Murnieks et al., 2014; Stenholm & Renko, 2016), but has accumulated surprisingly little knowledge about how a teams' functioning depends on the experience of passion, even though we know that a vast majority of new ventures is actually managed by a team of entrepreneurs (Kamm, Shuman, Seeger, & Nurick, 1990; Klotz et al., 2014). Recently, Santos and Cardon (2018) have set the stage for empirically investigating entrepreneurial passion in a team context, by examining the consequences of TEP for team performance. However, their findings have left us with many questions about how and when a team is influenced by team passion for specific entrepreneurial activities. They for instance report a positive effect of TEP for inventing on team performance, but an insignificantly negative effect for TEP for founding. We substantiate this line of research, on the one hand by advancing relationship conflict as an important mediator linking TEP with team performance, and on the other hand by distinguishing between the conception stage and the commercialization stage of a venture. In line with Santos and Cardon (2018), we for instance find that TEP for inventing brings about positive consequences in both development stages, embodied in the form of reduced relationship conflict, which leads to enhanced performance in the commercialization stage. But contrary to teams in the conception stage, teams in the commercialization stage benefit more from TEP for inventing – in terms of reduced relationship conflict and enhanced performance – if they complement this passion for inventing with a passion for founding activities. This is because the goals and expectations in the conception stage require engagement in inventing activities, while those in the commercialization stage additionally ask for a focus on founding activities. At the same time, this study also clarifies the insignificantly negative finding of TEP for founding on team performance reported by Santos and Cardon (2018). We find that teams who operate in the conception stage suffer from increased relationship conflict when they are (only) passionate about founding activities, and argue that this is due to the mismatch between the team's passion focus and the goals and stakeholder expectations in that specific development stage. Interestingly, TEP for founding only leads to more relationship conflict when TEP for inventing is absent. We believe this result may suggest that teams who are also passionate about inventing are better able to deal with stakeholders questioning their focus on founding activities in this stage, because their passion for inventing enables them to easily switch back to the activities that are deemed appropriate in this stage. Overall, the findings of this study provide more fine-grained insights into the consequences of TEP. We thereby push the entrepreneurial passion field to consider the underlying mechanisms and contingencies when addressing phenomena as complex as the experience of team passion, and as such iterate other scholars who have previously raised the same call in the individual-level passion literature (Baum & Locke, 2004; Baum et al., 2001).

Our study also contributes to the team literature by introducing the psychological construct of entrepreneurial passion in empirical research on new venture team dynamics. In so doing, we answer the call of Klotz et al. (2014) to investigate affective emergent states in new venture teams. The field expects to benefit from this type of research, because extant work has failed to uncover the actual psychological properties that influence team outcomes, due to the overly reliance on secondary data, and on surface-level variables such as demographics and functional experience (Klotz et al., 2014; Priem et al., 1999). Our results show that relationship conflict is significantly related to TEP for inventing and TEP for founding after having controlled for demographic and functional diversity, which confirms the need to directly investigate affective constructs such as TEP to get a more precise understanding of the factors that influence team outcomes. Furthermore, this study challenges the dominant perspective that relationship conflict is detrimental to performance at all times (de Wit et al., 2012; Ensley & Pearce, 2001). Our findings indicate that while this effect takes place for ventures in the commercialization stage, it does not hold for those in the conception stage. A potential explanation

could be that the consequences of relationship conflict do not materialize in the conception stage yet, given the nascent nature of the teams. This suggests that research on relationship conflict needs to take the development stage of a venture into account. As such, we fully support the concern of Thiel, Harvey, Courtright, and Bradley (2017), who recently expressed the need for research that examines how relationship conflict at different stages influences subsequent team processes and performance.

5.2 Practical implications

From a practical point of view, we first of all show new venture teams that they can benefit from enhanced team functioning when they are passionate about activities that are in line with the goals and stakeholder expectations peculiar to their specific development stage. Teams in the conception stage can best try to nurture positive group affect towards inventing activities, because a joint passion for these activities will reduce relationship conflict in the team. They can for instance foster this group affect by making sure that not one member but the whole team takes part in fun brainstorm sessions or in energizing inventing activities like hackathons. If a team in this stage, however, is passionate about launching the product, stakeholders will question this focus because the team is not ready to start commercializing the offer. If the team only has this passion for founding, but not for inventing, these interactions will engender frustration and annoyance in the team, leading to relationship conflict in the team. For ventures in the commercialization stage, we advise teams to stimulate group affect towards inventing as well as towards founding activities, because both types of activities are deemed appropriate in this stage. The collective feelings related to inventing and founding will enable the team to avoid relationship conflict, and to perform better.

In addition, we provide useful insights for grant suppliers, start-up support initiatives, and investors. Our findings help these stakeholders to foster constructive dynamics and enhance performance in their portfolio companies by stimulating the appropriate kind of team passion for the stage the venture is operating in. It is important for them to know that their feedback impacts team dynamics. When a team's passion focus is in line with the activities that are deemed appropriate, it is worthwhile to explicitly confirm this because it stimulates favorable team processes. On the other hand, if external stakeholders tell teams that they should focus on other activities than the ones they are passionate about, our findings suggest that it may be important to constructively guide the teams towards the right focus, as to avoid adverse team dynamics.

5.3 Limitations and directions for future research

Our study has a number of limitations that open up avenues for future research. First, although we collected our data at different points in time, and used different sources, the cross-sectional design of this study requires us to interpret causal claims with care. Our analyses with an MIIV-2SLS estimator reassure us that the specifications of our models are not biased by endogeneity, indicating that we can safely interpret the results of our study. However, given that, over time, feedback loops between the core variables in our model may emerge, we are very supportive of future research endeavors with a longitudinal design that include these feedback loops and that investigate how all constructs in the theoretical model influence each other over time. Second, from a statistical point of view, we see value in future research that draws on random samples of new venture teams. In this study, we relied on data drawn from teams that participated in a start-up competition, and thus operated in a highly dynamic environment. Although additional analyses suggest that the start-ups in our sample are comparable to those in a comprehensive dataset of hi-tech start-ups in Switzerland, it would be good if future research could replicate our results using a random sample.

Besides the need for future research endeavors that overcome these limitations, we are convinced that there is still a lot of work to be done to enhance our academic understanding of what it means for new venture teams to collectively experience entrepreneurial passion. First, this study focuses on early-stage new venture teams, because of the high impact of adverse team dynamics in young and small new venture teams. Co-founder exits are known to be particularly detrimental when new venture teams are still small (Guenther, Oertel, & Walgenbach, 2016). However, future research could shed light on whether and how exactly the consequences of TEP differ between early-stage start-ups and those that

have advanced into the growth stage. We advise to then also include TEP for developing in this future work. Second, most extant research on entrepreneurial passion, including this study, adheres to the domains of entrepreneurial passion identified in prior research, namely entrepreneurial roles related to different kinds of entrepreneurial activities. Recently, however, scholars have suggested that entrepreneurs may be passionate about aspects other than these entrepreneurial roles (e.g. a social cause, or the product/service itself) (Cardon et al., 2017). We therefore encourage research that examines a broader set of potential passion foci, as team passion towards these other common denominators may also have an impact on team functioning and performance. Third, this study advances relationship conflict as a mediating variable because of its emotional nature, and its importance in the team literature (Amason & Sapienza, 1997; Klotz et al., 2014). However, apart from the insights of this study, there is very little academic understanding about the consequences of TEP for new venture team processes. We therefore encourage researchers to also investigate the impact of TEP on other team outcomes, such as cohesion, social integration, or "group think". Fourth, this study shows the usefulness of statistical techniques such as response surface analysis for research on entrepreneurial passion in team contexts (Edwards & Parry, 1993). While we focus on the combination of two passion foci at the team level, future research could for instance apply the technique to investigate alignment or discrepancy between individual passions of two co-founders in dyadic teams. Lastly, given the complexity of the phenomena we are investigating, and the sparse empirical knowledge about TEP, we decided to limit the focus this study to the team level. This enabled us to describe the mechanisms at play with the necessary detail and nuance. However, we see a great need for multilevel studies that empirically investigate how the interplay between identities, emotions and passions of new venture team members relates to the emergence and experience of TEP.

5.4 Conclusion

In summary, this study shows that new venture teams can benefit but also suffer from TEP, depending on whether their passion focus is aligned with the venture's development stage. We hope that our findings inspire scholars to further investigate the role of passion in new venture teams.

Tables and figures 6

Table 1

Descriptive statistics and correlations^a.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Team performance	71.14	17.44	1.00										
2. Relationship conflict	1.98	0.94	-0.18^{\dagger}	1.00									
3. TEP inventing	38.28	7.27	0.01	-0.46**	1.00								
4. TEP founding	35.03	8.10	-0.04	-0.21 [†]	0.55^{**}	1.00							
5. Venture stage ^b	0.48	0.50	0.13	0.07	-0.01	0.02	1.00						
6. Industry: life sciences ^b	0.23	0.43	0.34**	-0.09	0.14	-0.01	0.03	1.00					
7. Industry: soft- & hardware ^b	0.40	0.49	-0.31**	0.05	-0.04	-0.17	-0.06	-0.45**	1.00				
8. Team size	2.55	0.78	0.11	0.09	-0.05	-0.05	0.14	0.00	0.01	1.00			
9. Functional diversity	0.02	0.63	-0.03	0.00	0.13	0.07	0.25^{*}	-0.08	0.12	0.39**	1.00		
10. Demographic diversity	0.00	0.73	0.11	-0.21†	0.08	0.03	0.10	0.11	0.06	0.16	0.52^{**}	1.00	
11. Cohort ^b	0.54	0.50	-0.11	-0.17	0.11	0.18	-0.23*	0.02	-0.10	0.06	-0.07	-0.11	1.00

Notes: a Pearson correlation coefficients (2-tailed); n = 86 teams; $^{\dagger} p \le 0.10$; $^* p \le 0.05$; $^{**} p \le 0.01$

^b Correlations with binary variables should be interpreted with care.

Table 2 Standardized factor loadings obtained by confirmatory factor analysis with cluster-robust standard errors.

	Factor 1	Factor 2	Factor 3
Collective positive feelings – inventing 1	0.658		
Collective positive feelings – inventing 2	0.741		
Collective positive feelings – inventing 3	0.819		
Collective positive feelings – inventing 4	0.805		
Collective positive feelings – founding 1		0.855	
Collective positive feelings – founding 2		0.920	
Collective positive feelings – founding 3		0.853	
Relationship conflict 1			0.729
Relationship conflict 2			0.920
Relationship conflict 3			0.883

Notes: n = 219 entrepreneurs in 86 teams; $\chi^{2}_{(31)}$ =41.092; p=0.106; CFI=0.987; TLI=0.981; RMSEA=0.039; SRMR=0.034.

Table 3

Structural relations of linear multi-group mediation model.

Path between variables		Co	onception st	age	Commercialization stage			
From	То	β	se	p-value	β	se	p-value	
Industry (life sciences)	\rightarrow Perf	0.244	6.791	0.195	0.254	6.218	0.071	
Industry (soft- & hardware)	\rightarrow Perf	-0.142	5.170	0.406	-0.186	6.332	0.248	
Relationship conflict	\rightarrow Perf	-0.105	3.345	0.625	-0.343	2.498	0.004	
TEP inventing	\rightarrow Perf	-0.144	0.515	0.558	0.044	0.437	0.794	
TEP founding	\rightarrow Perf	-0.031	0.242	0.831	-0.195	0.390	0.178	
Team size	\rightarrow RC	0.216	0.194	0.117	-0.007	0.160	0.965	
Functional diversity	$\rightarrow RC$	-0.181	0.180	0.085	0.366	0.246	0.042	
Demographic diversity	$\rightarrow RC$	-0.038	0.156	0.733	-0.503	0.178	0.001	
Cohort	\rightarrow RC	-0.222	0.233	0.055	-0.169	0.288	0.285	
TEP inventing ^a	\rightarrow RC	-0.712	0.020	0.000	-0.141	0.022	0.440	
TEP founding ^b	$\rightarrow RC$	0.339	0.014	0.007	-0.277	0.029	0.223	

Notes: β = standardized coefficient; se = standard error; $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams; TEP = team entrepreneurial passion; Perf = team performance; RC = relationship conflict;

Robust fit measures: χ²₍₁₂₎=12.939; p=0.374; CFI=0.982; TLI=0.949; RMSEA=0.043; SRMR=0.036; AIC=954.128; BIC=933.106; Slope comparison (commercialization stage – conception stage): $^{a}\Delta\beta=0.571$, se=0.030, p=0.008; $^{b}\Delta\beta=-0.616$, se=0.032, p=0.024.

Table 4

Bootstrap analyses for indirect effects of linear multi-group mediation model.

		Concept	ion stage	Со	mmercializ	zation stage	e	
Indirect relationship	β	se	95% C.I.		β	se	95%	C.I.
TEP inventing $\rightarrow \text{RC} \rightarrow \text{Team performance}$	0.075	0.415	-0.481	1.222	0.048	0.229	-0.234	0.719
TEP founding \rightarrow RC \rightarrow Team performance	-0.036	0.155	-0.439	0.213	0.095	0.272	-0.178	0.889

Notes: method: bias-corrected bootstrapping (5,000 iterations); $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams;

 β = standardized coefficient; se = standard error; C.I. = confidence interval;

TEP = team entrepreneurial passion; RC = relationship conflict.

Table 5

Results of polynomial multi-group mediation model.

Path between variables	between variables Conception			ge	Commerc	mercialization stage		
From	То	b	se	p-value	b	se	p-value	
Structural relations								
Industry (life sciences)	\rightarrow Perf	7.476	6.291	0.235	13.304	6.221	0.032	
Industry (soft- & hardware)	\rightarrow Perf	-5.107	4.728	0.280	-4.596	5.781	0.427	
Relationship conflict	\rightarrow Perf	-0.219	2.124	0.918	-6.568	2.523	0.009	
Team size	$\rightarrow \text{RC}$	0.238	0.157	0.129	0.152	0.087	0.079	
Functional diversity	$\rightarrow \text{RC}$	-0.244	0.173	0.159	0.560	0.177	0.002	
Demographic diversity	$\rightarrow \text{RC}$	0.158	0.151	0.296	-0.462	0.180	0.010	
Cohort	$\rightarrow \text{RC}$	-0.548	0.182	0.003	-0.198	0.235	0.401	
TEP inventing (b ₁)	$\rightarrow \text{RC}$	-1.574	0.517	0.002	-1.083	0.316	0.001	
TEP founding (b ₂)	$\rightarrow \text{RC}$	1.362	0.352	0.000	-1.164	0.331	0.000	
TEP inventing squared (b ₃)	$\rightarrow \text{RC}$	0.438	0.171	0.010	0.469	0.209	0.025	
TEP inventing x TEP founding (b ₄)	$\rightarrow \text{RC}$	-0.584	0.151	0.000	-0.429	0.335	0.201	
TEP founding squared (b ₅)	$\rightarrow \text{RC}$	0.041	0.071	0.559	0.662	0.175	0.000	
Slopes of conditional direct effects								
TEP founding (TEP inventing low ^a)	$\rightarrow \text{RC}$	0.917	0.270	0.001	-1.476	0.323	0.000	
TEP founding (TEP inventing high ^b)	$\rightarrow \text{RC}$	-0.137	0.241	0.569	-2.271	0.793	0.004	
TEP inventing (TEP founding low ^a)	$\rightarrow RC$	-1.639	0.522	0.002	-1.249	0.366	0.001	
TEP inventing (TEP founding high ^b)	$\rightarrow \text{RC}$	-2.948	0.693	0.000	-2.013	0.852	0.018	

Notes: b = unstandardized coefficient; se = standard error; $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams; TEP = team entrepreneurial passion; Perf = team performance; RC = relationship conflict;

^a low = mean - 1x standard deviation; ^b high = mean + 1x standard deviation;

Robust fit measures: χ²₍₂₂₎=15.338; p=0.847; CFI=1.000; TLI=1.187; RMSEA=0.000; SRMR=0.034; AIC=927.211; BIC=904.788.

Table 6

Bootstrap analyses for indirect effects of polynomial multi-group mediation model.

	Conception stage				Commercialization stage				
Indirect relationship (slopes)	b	se	95% C.I.		b	se	95%	C.I.	
TEP founding \rightarrow RC \rightarrow Perf (TEPinv low ^a)	-0.201	2.433	-5.286	4.946	9.694	5.311	-0.343	20.468	
TEP founding \rightarrow RC \rightarrow Perf (TEPinv high ^b)	0.030	0.992	-1.676 2.311		14.917	10.486	0.454	45.079	
TEP inventing $\rightarrow \text{RC} \rightarrow \text{Perf}$ (TEPfnd low ^a)	0.359	4.109	-7.801	9.060	8.202	5.687	-0.496	21.995	
TEP inventing \rightarrow RC \rightarrow Perf (TEPfnd high ^b)	0.646	7.289	-13.755	15.976	13.222	10.919	-0.137	46.080	

Notes: method: bias-corrected bootstrapping (5,000 iterations); $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams;

b = unstandardized coefficient; se = standard error; C.I. = confidence interval; TEP = team entrepreneurial passion;

Perf = team performance; RC = relationship conflict; TEPinv = TEP for inventing; TEPfnd = TEP for founding;

^a low = mean - 1x standard deviation; ^b high = mean + 1x standard deviation.



Fig. 1. Response surface plots for teams in the conception stage. *Notes*: M-I = monofocal TEP for inventing; M-F = monofocal TEP for founding; P = polyfocal TEP. The axes of the predictors range from -1 to 3 rather than -3 to 3, because of the left-skewed nature of both variables. Colors: green (red) reflects beneficial (bad) levels of outcome.



Fig. 2. Response surface plots for teams in the commercialization stage.

Notes: M-I = monofocal TEP for inventing; M-F = monofocal TEP for founding; P = polyfocal TEP. The axes of the predictors range from -1 to 3 rather than -3 to 3, because of the left-skewed nature of both variables. Colors: green (red) reflects beneficial (bad) levels of outcome.

Table 7

Surface values based on polynomial multi-group mediation model.

Surface value	Con	ception stag	ge	Commercialization stage	
	Coefficient	se	p-value	Coefficient se p-value	_
Relationship conflict					
Slope LOC (a ₁)	-0.211	0.467	0.654	-2.247 0.533 0.000	
Curvature LOC (a ₂)	-0.104	0.147	0.482	0.702 0.183 0.000	
Slope LOIC (a ₃)	-2.936	0.691	0.000	0.081 0.624 0.897	
Curvature LOIC (a ₄)	1.064	0.350	0.004	1.560 0.619 0.016	
Performance (indirect effects)					
Slope LOC (a ₁)	0.047	5.503	0.993	14.757 7.070 0.043	
Curvature LOC (a ₂)	0.023	6.686	0.997	-4.610 7.416 0.538	
Slope LOIC (a ₃)	0.643	5.322	0.904	-0.531 6.921 0.939	
Curvature LOIC (a ₄)	-0.233	3.918	0.953	-10.250 3.506 0.006	

Notes: se = standard error; $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams;

LOC = line of congruence (TEP inventing = TEP founding); LOIC = line of incongruence (TEP inventing = - TEP founding); Calculation surface values based on coefficients in Table 5:

 $a_1=b_1+b_2; a_2=b_3+b_4+b_5;$

 $a_3=b_1-b_2; a_4=b_3-b_4+b_5.$

Appendix A. Measuring team entrepreneurial passion

Table A.1

Team entrepreneurial passion scale^a (adapted from Cardon et al., 2013).

	F
Instructions	Having in mind how your <u>team</u> has been working, please indicate the extent to which you agree or disagree with each statement.
	Note: the questions refer to the entire <u>team</u> of people involved in the ongoing operations and in taking strategic decisions for the start-up, <u>not</u> to you as an individual.
Scale anchors	1 = 'strongly disagree'; 2 = 'disagree'; 3 = 'somewhat disagree'; 4 = 'neither agree nor disagree'; 5 = 'somewhat agree'; 6 = 'agree'; 7 = 'strongly agree'
Item code	Item
TEP-inv-CPF1	For us as a team, it is exciting to figure out new ways to solve unmet market needs that can be commercialized.
TEP-inv-CPF2	Searching for new ideas for products/services to offer is enjoyable to our team.
TEP-inv-CPF3	We, as a team, are motivated to figure out how to make existing products/services better.
TEP-inv-CPF4	Scanning the environment for new opportunities really excites our team.
TEP-inv-TI1	Inventing new solutions to problems is an important part of who we are as a team.
TEP-fnd-CPF1	Establishing a new company excites us as a team.
TEP-fnd-CPF2	Owning our own company energizes our team.
TEP-fnd-CPF3	For our team, nurturing a new business through its emerging success is enjoyable.
TEP-fnd-TI1	Being the founder of a business is an important part of who we are.

Notes: TEP = team entrepreneurial passion; CPF = collective positive feelings; TI = team identity; inv = inventing; fnd = founding. ^a Scholars that would like to investigate team entrepreneurial passion for developing in future research could rely on Chan (1998) to shift the corresponding individual-level items developed by Cardon et al. (2013) to the team level.

Appendix B. Prerequisites for polynomial regression with response surface analysis

Following the procedure of Shanock et al. (2010), we first evaluated whether there is a balance between teams that are aligned and teams that diverge with respect to TEP for inventing and TEP for founding. The subsamples (teams in the conception stage, and teams in the commercialization stage) need to comprise both aligned and divergent teams, because there is no point of investigating discrepancies when no or only few observations show divergent values for both predictors. In each subsample, teams were considered to display discrepancy between both variables when the standardized score for TEP for inventing was at least half a standard deviation above or below the standardized score for TEP for founding. 55.56% of the teams in the conception stage, and 43.90% of the teams in the commercialization stage, showed divergence between both predictors in either direction (cfr. Table B.1), implying practical value in pursuing our analysis.

Table B.1
Frequencies of TEP for inventing levels over, under, and in-agreement with TEP for founding levels ^a .

	(Conception stage	e	Commercialization stage			
Agreement groups	Percentage	Mean TEP inventing	Mean TEP founding	Percentage	Mean TEP inventing	Mean TEP founding	
TEP inventing > TEP founding	24.44%	42.897 (0.633)	27.550 (-0.816)	19.51%	41.620 (0.458)	29.750 (-0.767)	
In agreement	44.44%	39.469 (0.158)	36.965 (0.234)	56.10%	38.819 (0.080)	35.419 (0.029)	
TEP founding > TEP inventing	31.11%	33.103 (-0.724)	37.618 (0.307)	24.39%	34.147 (-0.550)	39.109 (0.547)	

Notes: $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams; TEP = team entrepreneurial passion;

^a means of standardized variables between brackets.

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DOES TEAM ENTREPRENEURIAL PASSION MATTER FOR RELATIONSHIP CONFLICT AND TEAM PERFORMANCE? ON THE IMPORTANCE OF FIT BETWEEN PASSION FOCUS AND VENTURE DEVELOPMENT STAGE

SUPPLEMENTARY MATERIAL

This document is not intended for publication.

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1 METHOD: QUANTITATIVE MEASURES

1.1 Normal distribution team performance

The variable team performance, reflected by the team's competition score, has a minimum value of 0 and a maximum value of 120. The and is normally distributed. Please find below some more details about the variable.



Fig. S1. Histogram team performance

1.2 Team performance: interrater reliability of judges

Team performance was determined by averaging all competition scores a certain project had received. This calculation is justified, as the intraclass correlation coefficient ICC(K) was 0.70, indicating that the mean rating assigned by a group of judges was reliable. Please find the output of the analysis below. For the type of ICC we are interested in, the relevant output is the value reported on the line of ICC1k (LeBreton & Senter, 2008).

Call: ICC(x = subset(SeparateAssessments.wide, select = c("rating1", "rating2", "rating3", "rating4"))) Intraclass correlation coefficient type ICC F df1 df2 p Average_raters_absolute ICC1k 0.70 3.3 85 258 1.3e-13 Average_random_raters ICC2k 0.70 3.4 85 255 3.2e-14 Average_fixed_raters ICC3k 0.71 3.4 85 255 3.2e-14 Number of subjects = 86 Number of Judges = 4

RESULTS: POLYNOMIAL MULTI-GROUP MEDIATION MODEL 2

Slopes of conditional effects at different percentiles 2.1

Table S.1 Slopes of conditional direct effects of polynomial multi-group mediation model at the 10th, 25th, 50th, 75th, and 90th percentiles.

	Conception stage						Commercialization stage				
Relationship	Percentile	Percentile value	b	se	95%	C.I.	Percentile value	b	se	95%	C.I.
$TEPfnd \to RC$	TEPinv: 10th	0.241	1.222	0.324	0.587	1.857	0.476	-1.368	0.304	-1.965	-0.772
$TEPfnd \to RC$	TEPinv: 25 th	1.000	0.778	0.25	0.288	1.268	1.066	-1.621	0.378	-2.361	-0.881
$TEPfnd \rightarrow RC$	TEPinv: 50 th	1.750	0.34	0.215	-0.082	0.763	1.750	-1.915	0.546	-2.986	-0.844
$TEPfnd \rightarrow RC$	TEPinv: 75 th	2.461	-0.075	0.234	-0.534	0.384	2.563	-2.264	0.788	-3.808	-0.72
$TEPfnd \rightarrow RC$	TEPinv: 90 th	2.781	-0.262	0.257	-0.766	0.243	2.781	-2.358	0.856	-4.035	-0.68
$\text{TEPinv} \rightarrow \text{RC}$	TEPfnd: 10 th	-0.100	-1.515	0.514	-2.522	-0.508	0.000	-1.083	0.316	-1.702	-0.463
$TEPinv \rightarrow RC$	TEPfnd: 25 th	0.250	-1.72	0.527	-2.753	-0.686	0.625	-1.351	0.415	-2.164	-0.539
$TEPinv \rightarrow RC$	TEPfnd: 50 th	1.125	-2.23	0.581	-3.37	-1.091	1.375	-1.673	0.612	-2.872	-0.474
$TEPinv \rightarrow RC$	TEPfnd: 75 th	2.156	-2.833	0.673	-4.152	-1.513	2.021	-1.95	0.806	-3.53	-0.371
$TEPinv \rightarrow RC$	TEPfnd: 90 th	3.000	-3.325	0.764	-4.822	-1.828	2.427	-2.125	0.933	-3.954	-0.295

Notes: n_(conception) = 45 teams; n_(commercialization) = 41 teams; b = unstandardized coefficient; se = standard error; C.I. = confidence interval; TEP = team entrepreneurial passion;

Perf = team performance; RC = relationship conflict; TEPinv = TEP for inventing; TEPfnd = TEP for founding

		Conception stage						Comr	nercialization st	age	
Relationship	Percentile	Percentile value	b	se	95%	C.I.	Percentile value	b	se	95%	C.I.
$TEPfnd \to RC \to Perf$	TEPinv: 10 th	0.241	-0.268	3.178	-6.886	6.396	0.476	8.985	4.957	-0.364	19.187
$TEPfnd \to RC \to Perf$	TEPinv: 25th	1.000	-0.171	2.106	-4.566	4.304	1.066	10.65	5.995	-0.197	23.981
$TEPfnd \to RC \to Perf$	TEPinv: 50 th	1.750	-0.075	1.183	-2.743	2.129	1.750	12.578	7.835	0.195	32.835
$TEPfnd \to RC \to Perf$	TEPinv: 75 th	2.461	0.016	0.931	-1.597	2.128	2.563	14.869	10.429	0.438	44.805
$TEPfnd \to RC \to Perf$	TEPinv: 90th	2.781	0.057	1.172	-1.901	2.852	2.781	15.486	11.167	0.551	48.357
$\text{TEPinv} \rightarrow \text{RC} \rightarrow \text{Perf}$	TEPfnd: 10th	-0.100	0.332	3.824	-7.073	8.527	0.000	7.113	5.028	-0.319	19.767
$\text{TEPinv} \rightarrow \text{RC} \rightarrow \text{Perf}$	TEPfnd: 25th	0.250	0.377	4.295	-8.166	9.476	0.625	8.875	6.229	-0.614	23.973
$\text{TEPinv} \rightarrow \text{RC} \rightarrow \text{Perf}$	TEPfnd: 50th	1.125	0.489	5.517	-10.449	12.173	1.375	10.99	8.34	-0.412	33.748
$\text{TEPinv} \rightarrow \text{RC} \rightarrow \text{Perf}$	TEPfnd: 75th	2.156	0.62	7.001	-13.253	15.346	2.021	12.811	10.427	-0.255	43.637
TEPinv \rightarrow RC \rightarrow Perf	TEPfnd: 90th	3.000	0.728	8.233	-15.639	18.086	2.427	13.956	11.807	-0.175	49.574

Table S.2 Slopes of conditional indirect effects of polynomial multi-group mediation model at the 10th, 25th, 50th, 75th, and 90th percentiles.

Notes: method: bias-corrected bootstrapping (5,000 iterations); $n_{(conception)} = 45$ teams; $n_{(commercialization)} = 41$ teams; b = unstandardized coefficient; se = standard error; C.I. = confidence interval; TEP = team entrepreneurial passion; Perf = team performance; RC = relationship conflict; TEPinv = TEP for inventing; TEPfnd = TEP for founding.

3 RESULTS: ADDITIONAL ANALYSES

3.1 Endogeneity

In order to alleviate the concerns of endogeneity, we applied the Model Implied Instrumental Variable, Two Stage Least Squares (MIIV-2SLS) estimator, using the recently developed MIIVsem package in R (Fisher et al., 2017). Given that MIIVsem is not compatible with multi-group SEM models, we conducted the analyses per development stage. The results below show that the findings are robust, and that the equations are not subject to misspecification (Sargan, 1958).

3.1.1 <u>Multi-group mediation</u>

A. Conception stage

MIIVsem (0.5.5) results

Number of observat Number of equation Estimator Standard Errors Missing	tions ns					M	45 2 IIV-2SLS standard listwise
Parameter Estimate	es:						
STRUCTURAL COEFFIC	CIENTS:						
	Estimate	Std.Err	z-value	P(> z)	Sargan	df	P(Chi)
ProjectScore ~							
Ind_LS	8.801	6.207	1.418	0.156	1.351	4	0.853
Ind_SH	-4.300	5.186	-0.829	0.407			
invTEP	-0.302	0.497	-0.607	0.544			
fndTEP	-0.052	0.291	-0.177	0.859			
RC	-1.633	2.986	-0.547	0.584			
RC ~							
invTEP	-0.096	0.016	-5.979	0.000	1.187	2	0.552
fndTEP	0.037	0.014	2.730	0.006			
Teamsize	0.304	0.181	1.680	0.093			
FntlDiv	-0.309	0.236	-1.310	0.190			
DmgrDiv	-0.053	0.179	-0.297	0.767			
Cohort	-0.448	0.218	-2.051	0.040			
INTERCEPTS:							
	Estimate	Std.Err	z-value	P(> z)			
ProjectScore	71.937	6.662	10.797	0.000			
RC	2.192	0.172	12.708	0.000			

B. Commercialization stage

MIIVsem (0.5.5) results

Number of observat Number of equation Estimator Standard Errors Missing	M] 5]	41 2 IIV-2SLS standard Listwise					
Parameter Estimate	es:						
STRUCTURAL COEFFIC	CIENTS:						
	Estimate	Std.Err	z-value	P(> z)	Sargan	df	P(Chi)
ProjectScore ~							
Ind_LS	11.225	6.845	1.640	0.101	5.465	4	0.243
Ind_SH	-7.321	6.639	-1.103	0.270			
invTEP	0.114	0.461	0.248	0.804			
fndTEP	-0.524	0.515	-1.017	0.309			
RC	-7.247	3.073	-2.358	0.018			
RC ~							
invTEP	-0.017	0.022	-0.792	0.428	2.854	2	0.240
fndTEP	-0.035	0.023	-1.562	0.118			
Teamsize	-0.007	0.154	-0.046	0.963			
FntlDiv	0.502	0.222	2.257	0.024			
DmgrDiv	-0.591	0.187	-3.162	0.002			
Cohort	-0.308	0.259	-1.189	0.235			
INTERCEPTS:							
	Estimate	Std.Err	z-value	P(> z)			
ProjectScore	88.429	7.319	12.081	0.000			
RC	2.146	0.162	13.284	0.000			

3.1.2 <u>Polynomial multi-group mediation</u>

A. Conception stage MIIVsem (0.5.5) results

Number of observat Number of equation Estimator Standard Errors Missing	ions s					M] S	45 2 IIV-2SLS standard Listwise
Parameter Estimate	s:						
STRUCTURAL COEFFIC	IENTS: Estimate	Std.Err	z-value	P(> z)	Sargan	df	P(Chi)
ProjectScore ~	2002111000	0001211	2 10200	. (. 1=1)	our gun	u.	. (0.12)
Ind_LS	7.476	5.799	1.289	0.197	2.847	9	0.970
RC	-0.219	4.947	-0.097	0.302			
RC ~							
Teamsize	0.238	0.159	1.497	0.134	1.517	2	0.468
DmgrDiv	0.158	0.163	0.967	0.333			
Cohort	-0.548	0.191	-2.872	0.004			
invTEP_midpont	-1.574	0.410	-3.838	0.000			
invTEP_mldpont	0.438	0.320	4.200	0.000			
invfnd_mdpnt_c	-0.584	0.152	-3.848	0.000			
<pre>fndTEP_mdpnt_s</pre>	0.041	0.093	0.447	0.655			
INTERCEPTS							
1	Estimate	Std.Err	z-value	P(> z)			
ProjectScore	69.864	6.151	11.358	0.000			
RC	3.009	0.275	10.938	0.000			
B. Comme	rcializat	ion stag	e				
MIIVsem (0.5.5) re	sults	ion seng					
Number of observat Number of equation	ions s						41 2
Estimator Standard Errors						M]	IV-2SLS
Missing]	listwise
Parameter Estimate	s:						
STRUCTURAL COEFFIC	IENTS:				6	-10	
ProjectScore ~	Estimate	Sta.Err	z-vaiue	P(> Z)	Sargan	ат	P(Ch1)
Ind_LS	13.304	6.673	1.994	0.046	6.861	9	0.652
Ind_SH	-4.596	6.247	-0.736	0.462			
RC RC ~	-6.568	3.044	-2.158	0.031			
Teamsize	0.152	0.130	1.170	0.242	2.193	2	0.334
FntlDiv	0.560	0.177	3.168	0.002			
DmgrDiv	-0.462	0.152	-3.049	0.002			
Cohort	-0.198	0.208	-0.948	0.343			
fndTFP_midpont	-1.164	0.392	-3.664	0.000			
invTEP_mdpnt_s	0.469	0.174	2.696	0.007			
invfnd_mdpnt_c	-0.429	0.262	-1.638	0.101			
fndTEP_mdpnt_s	0.662	0.174	3.809	0.000			
INTERCEPTS:	Coting t	Ct.d. 5					
ProjectScore	EST1MATE 85.433	6.883	2-vaiue 12,411	r(> Z) 0,000			
RC	3.197	0.298	10.740	0.000			

4 RESULTS: ROBUSTNESS CHECKS

To assure that our model provides us with the correct insights, we conducted analyses using different model specifications as robustness checks.

4.1 Partial versus full mediation

4.1.1 <u>Multi-group mediation model: full mediation</u>

Given that the multi-group mediation model revealed insignificant direct effects of both TEP for inventing and TEP for founding on team performance, we also computed a fully mediated model removing the direct effects from the model. This model returned equally good fit measures, and provided the same conclusions.

lavaan 0.6-3 ended normally after 104 iterations

Optimization method Number of free parameters	NLMINB 26					
Number of observations per group 0 1	45 41					
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplus v	ML 13.389 16 0.644 ariant)	Robust 15.209 16 0.509 0.880				
Chi-square for each group:						
0 1	3.343 10.046	3.797 11.411				
Model test baseline model:						
Minimum Function Test Statistic Degrees of freedom P-value	79.916 34 0.000	85.943 34 0.000				
User model versus baseline model:						
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.121	1.000 1.032				
Robust Comparative Fit Index (CFI) Robust Tucker-Lewis Index (TLI)		1.000 1.031				
Loglikelihood and Information Criteria:						
Loglikelihood user model (H0) Scaling correction factor	-448.059	-448.059 1.029				
Loglikelihood unrestricted model (H1) Scaling correction factor	-441.365	-441.365 0.972				
for the MLR	correction					
---	---	--	---	--	---	---
Number of fre Akaike (AIC) Bayesian (BIC Sample-size a	e parameters) djusted Bayes	ian (BIC)		26 948.118 1011.931 929.900	948.1 1011.9 929.9	26 18 31 00
Root Mean Squar	e Error of Ap	proximati	on:			
RMSEA 90 Percent Co P-value RMSEA	nfidence Inte <= 0.05	erval	0.00	0.000 0.118 0.739	0.0 0.0 0.6	00 00 0.141 07
Robust RMSEA 90 Percent Co	nfidence Inte	erval			0.0 0.0	00 00 0.126
Standardized Ro	ot Mean Squar	e Residua	1:			
SRMR				0.038	0.0	38
Parameter Estim	ates:					
Information Observed info Standard Erro	rmation based rs	l on R	obust.hub	Observed Hessian er.white		
Group 1 [0]:						
Regressions:	Estimate	Std Err	z-v2100	P(> z)	Std ly	Std all
ProjectScore Ind_LS (Ind_SH (RC (~ v0) 7.476 w0) -5.107 b0) -0.219	6.291 4.728 2.124	1.188 -1.080 -0.103	0.235 0.280 0.918	7.476 -5.107 -0.219	0.208 -0.169 -0.014
Teamsiz (FntlDiv (DmgrDiv (Cohort (invTEP (a0 fndTEP (a0	r0) 0.304 s0) -0.309 t0) -0.053 u0) -0.448 .1) -0.096 .2) 0.037	0.194 0.180 0.156 0.233 0.020 0.014	1.566 -1.722 -0.341 -1.922 -4.817 2.703	0.117 0.085 0.733 0.055 0.000 0.007	0.304 -0.309 -0.053 -0.448 -0.096 0.037	0.216 -0.181 -0.038 -0.222 -0.712 0.339
Intercepts:						
.ProjectScor .RC	Estimate e 69.864 2.192	Std.Err 5.159 0.191	z-value 13.543 11.489	P(> z) 0.000 0.000	Std.lv 69.864 2.192	Std.all 4.669 2.267
Variances:	Estimate	Std Frr	z-value	P(> 7)	Std lv	Std all
.ProjectScor .RC	e 200.620 0.429	44.495 0.081	4.509 5.289	0.000	200.620 0.429	0.896 0.459
Group 2 [1]:						
Regressions:	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectScore Ind_LS (Ind_SH (RC (~ v1) 13.305 w1) -4.596 b1) -6.568	6.221 5.781 2.523	2.139 -0.795 -2.603	0.032 0.427 0.009	13.305 -4.596 -6.568	0.300 -0.116 -0.310
Teamsiz (FntlDiv (DmgrDiv (Cohort (invTEP (al fndTEP (al	r1) -0.007 s1) 0.502 t1) -0.591 u1) -0.308 .1) -0.017 .2) -0.035	0.160 0.246 0.178 0.288 0.022 0.029	-0.044 2.038 -3.326 -1.070 -0.772 -1.219	0.965 0.042 0.001 0.285 0.440 0.223	-0.007 0.502 -0.591 -0.308 -0.017 -0.035	-0.007 0.366 -0.503 -0.169 -0.141 -0.277
Intercepts:		o	-	B/c L L	0.1.7	o
.ProjectScor .RC	Estimate e 85.433 2.146	Std.Err 6.697 0.176	z-value 12.757 12.222	P(> z) 0.000 0.000	Std.lv 85.433 2.146	Std.all 4.483 2.388

Variances:

	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectScore	273.883	64.610	4.239	0.000	273.883	0.754
.RC	0.576	0.114	5.042	0.000	0.576	0.714

Comparison reported model and fully mediated model:

	Df	AIC	BIC	Chisq	Chisq	diff	Df	diff	Pr(>Chisq)
fitTEPPerf.2S.MG	12	954.13	1027.8	11.398					
fitTEPPerf.2S.MG.FullMed	16	948.12	1011.9	13.389	2.	2658		4	0.687

4.1.2 <u>Polynomial mediation: including direct effects</u>

Similarly, for the polynomial mediation, we ran an additional model including direct effects from TEP for inventing and TEP for founding on team performance. The results of this model are in line with the reported polynomial mediation, with comparable fit measures.

lavaan 0.6-3 ended normally after 193 iterations

Optimization method Number of free parameters	NLMINB 42		
Number of observations per group 0 1	45 41		
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplu	ML 10.773 12 0.548 us variant)	Robust 11.566 12 0.481 0.931	
Chi-square for each group:			
0 1	3.039 7.734	3.263 8.303	
Model test baseline model:			
Minimum Function Test Statistic Degrees of freedom P-value	113.682 46 0.000	120.321 46 0.000	
User model versus baseline model:			
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.069	1.000 1.022	
Robust Comparative Fit Index (CFI) Robust Tucker-Lewis Index (TLI)		1.000 1.022	
Loglikelihood and Information Criteria:			
Loglikelihood user model (H0) Scaling correction factor for the MLR correction	-429.868	-429.868 0.988	
Loglikelihood unrestricted model (H1) Scaling correction factor for the MLR correction	-424.482	-424.482 0.976	
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BIC)	42 943.737 1046.819 914.307	42 943.737 1046.819 914.307	
Root Mean Square Error of Approximation:			
RMSEA 90 Percent Confidence Interval P-value RMSEA <= 0.05	0.000 0.000 0.142 0.641	0.000 0.000 0.572	0.155
Robust RMSEA 90 Percent Confidence Interval		0.000 0.000	0.146

Standardized Root Mean Square Residual:

Parameter Estimates:

Informati	lon		0bserved	
Observed	information	based	on	Hessian
Standard	Errors			Robust.huber.white

Regressions:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectScore	~						
Ind_LS	(v0)	8.620	6.806	1.267	0.205	8.620	0.239
Ind_SH	(w0)	-4.424	5.493	-0.805	0.421	-4.424	-0.145
invTEP_		0.150	11.403	0.013	0.990	0.150	0.009
fndTEP_		3.735	6.192	0.603	0.546	3.735	0.276
inTEP		-0.589	3.464	-0.170	0.865	-0.589	-0.112
invfn		-0.440	4.304	-0.102	0.919	-0.440	-0.087
fnTEP		-1.238	2.477	-0.500	0.617	-1.238	-0.263
RC	(b0)	-1.923	3.747	-0.513	0.608	-1.923	-0.124
RC ~							
Teamsiz	(r0)	0.238	0.157	1.518	0.129	0.238	0.169
FntlDiv	(s0)	-0.244	0.173	-1.410	0.159	-0.244	-0.142
DmgrDiv	(t0)	0.158	0.151	1.046	0.296	0.158	0.111
Cohort	(u0)	-0.548	0.182	-3.018	0.003	-0.548	-0.272
invTEP_ (a	0.1)	-1.574	0.517	-3.042	0.002	-1.574	-1.453
fndTEP_ (a	0.2)	1.362	0.352	3.870	0.000	1.362	1.562
inTEP (a	0.3)	0.438	0.171	2.566	0.010	0.438	1.291
invfn (a	0.4)	-0.584	0.151	-3.866	0.000	-0.584	-1.789
fnTEP (a	0.5)	0.041	0.071	0.584	0.559	0.041	0.137
Intercepts:							
211001 000 001		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectSco	re	74.348	14.100	5.273	0.000	74.348	4.950
.RC		3.009	0.414	7.276	0.000	3.009	3.113
Variances							
		Estimate	Std.Err	z-value	P(> 7)	Std lv	Std.all
.ProjectSco	re	194.280	44.082	4.407	0.000	194,280	0.861
.RC		0.316	0.062	5.056	0.000	0.316	0.338

```
Group 2 [1]:
```

Regressions:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSco	ore ~						
Ind_LS	(v1)	10.784	6.420	1.680	0.093	10.784	0.243
Ind_SH	(w1)	-7.697	6.424	-1.198	0.231	-7.697	-0.194
invTEP_		4.626	12.433	0.372	0.710	4.626	0.222
fndTEP_		-5.974	7.342	-0.814	0.416	-5.974	-0.275
inTEP		-3.545	4.637	-0.764	0.445	-3.545	-0.542
invfn		5.918	5.314	1.114	0.265	5.918	0.734
fnTEP		-3.158	4.827	-0.654	0.513	-3.158	-0.361
RC	(b1)	-6.518	3.649	-1.786	0.074	-6.518	-0.307
RC ~							
Teamsiz	(r1)	0.152	0.087	1.756	0.079	0.152	0.143
FntlDiv	(s1)	0.560	0.177	3.167	0.002	0.560	0.408
DmgrDiv	(t1)	-0.462	0.180	-2.565	0.010	-0.462	-0.393
Cohort	(u1)	-0.198	0.235	-0.840	0.401	-0.198	-0.108
invTEP_	(a1.1)	-1.083	0.316	-3.426	0.001	-1.083	-1.103
fndTEP_	(a1.2)	-1.164	0.331	-3.518	0.000	-1.164	-1.139
inTEP	(a1.3)	0.469	0.209	2.245	0.025	0.469	1.522
invfn	(a1.4)	-0.429	0.335	-1.280	0.201	-0.429	-1.131
fnTEP	(a1.5)	0.662	0.175	3.777	0.000	0.662	1.609
Intercepts:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	91.732	15.442	5.940	0.000	91.732	4.809
. RC		3.197	0.245	13.028	0.000	3.197	3.558

Variances:

	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectScore	260.660	68.198	3.822	0.000	260.660	0.716
.RC	0.362	0.092	3.939	0.000	0.362	0.448

Comparison reported model and model including direct effects:

	Df	AIC	BIC	Chisq	Chisq di	ff Df	diff	<pre>Pr(>Chisq)</pre>
<pre>fitSEMpolyMid.MG.Perf.Free.Direct</pre>	12	943.74	1046.8	10.773				
fitSEMpolyMid.MG.Perf.FullMed.Free	22	927.21	1005.8	14.247	3.75	26	10	0.9578

4.2 Control variables

For both the multi-group and the polynomial multi-group mediation model, we estimated alternative models including all control variables (team size, functional diversity, demographic diversity, cohort, and industry) in the equation estimating team performance, resulting in the same conclusions and equally good fit measures as the reported models. For reasons of parsimony, we decided to report the model containing fewer control variables.

4.2.1 <u>Multi-group mediation: more control variables</u>

lavaan 0.6-3 ended normally after 168 iterations

Optimization method Number of free parameters	NLMINB 38	
Number of observations per group 0 1	45 41	
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplus	ML 4.161 4 0.385 variant)	Robust 4.468 4 0.346 0.931
Chi-square for each group:		
0 1	1.203 2.958	1.292 3.176
Model test baseline model:		
Minimum Function Test Statistic Degrees of freedom P-value	79.916 34 0.000	85.943 34 0.000
User model versus baseline model:		
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	0.996 0.970	0.991 0.923
Robust Comparative Fit Index (CFI) Robust Tucker-Lewis Index (TLI)		0.991 0.923
Loglikelihood and Information Criteria:		
Loglikelihood user model (H0) Scaling correction factor for the MIR correction	-443.446	-443.446 0.977
Loglikelihood unrestricted model (H1) Scaling correction factor for the MLR correction	-441.365	-441.365 0.972
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BIC)	38 962.891 1056.156 936.264	38 962.891 1056.156 936.264

Root Mean Square Error of Approximation:

RMSEA 90 Percent Conf P-value RMSEA <	idence Inte = 0.05	rval	0.00	0.031 0 0.234 0.441	0.0 0.0 0.3	52 00 0.248 99
Robust RMSEA 90 Percent Conf	idence Inte	rval			0.0 0.0	50 00 0.233
Standardized Root	Mean Squar	e Residua	1:			
SRMR				0.021	0.0	21
Parameter Estimat	es:					
Information Observed inform Standard Errors	ation based	on R	obust.hub	Observed Hessian er.white		
Group 1 [0]:						
Regressions:	Ectimato	Std Err	z-v2]u0	P(> z)	S+d 1v	S+d all
ProjectScore ~		3tu.LII	2-value	r (> 2)	510.10	
Teamsiz (r00 FntlDiv (s00 DmgrDiv (t00 Cohort (u00 Ind_LS (v00 Ind_SH (w00 invTEP (c0.1 fndTEP (c0.2 RC (b0) 0.625) -3.744) -0.755) -3.235) 10.822) -2.758) -0.441) 0.062) -2.768	3.484 5.247 3.718 5.082 7.120 5.226 0.500 0.247 3.532	0.179 -0.714 -0.203 -0.637 1.520 -0.528 -0.883 0.252 -0.784	0.858 0.475 0.839 0.524 0.129 0.598 0.377 0.801 0.433	0.625 -3.744 -0.755 -3.235 10.822 -2.758 -0.441 0.062 -2.768	0.028 -0.140 -0.034 -0.103 0.299 -0.091 -0.209 0.037 -0.178
Teamsiz (r10 FntlDiv (s10 DmgrDiv (t10 Cohort (u10 invTEP (a0.1 fndTEP (a0.2) 0.304) -0.309) -0.053) -0.448) -0.096) 0.037	0.194 0.180 0.156 0.233 0.020 0.014	1.566 -1.722 -0.341 -1.922 -4.817 2.703	0.117 0.085 0.733 0.055 0.000 0.007	0.304 -0.309 -0.053 -0.448 -0.096 0.037	0.216 -0.181 -0.038 -0.222 -0.712 0.339
Intercepts:	Fatherie		.1 .			614.11
.ProjectScore .RC	2.192	8.497 0.191	8.776 11.489	0.000 0.000 0.000	74.571 2.192	4.956 2.267
Variances:	Falleria		.1 .			614.11
.ProjectScore .RC	Lstimate 191.303 0.429	38.634 0.081	z-value 4.952 5.289	P(> Z) 0.000 0.000	5td.1V 191.303 0.429	0.845 0.459
Group 2 [1]:						
Regressions:	Fattanta		.1 .		ou 1 1	Cu . 11
ProjectScore ~ Teamsiz (r01 FntlDiv (s01 DmgrDiv (t01 Cobort (u01	Estimate) 6.360) -0.929) 2.336) -7 222	Std.Err 2.288 3.694 4.063 6.208	z-value 2.779 -0.251 0.575 -1 163	P(> z) 0.005 0.802 0.565 0.245	Std.lv 6.360 -0.929 2.336 -7 222	Std.all 0.284 -0.032 0.094 -0 188
Ind_LS (v01 Ind_SH (w01 invTEP (c1.1 fndTEP (c1.2 RC (b1) 9.882) -9.809) 0.154) -0.739) -6.708	5.985 6.268 0.390 0.359 2.505	1.651 -1.565 0.396 -2.059 -2.678	0.099 0.118 0.692 0.039 0.007	9.882 -9.809 0.154 -0.739 -6.708	0.224 -0.250 0.060 -0.275 -0.318
RC ~ Teamsiz (r11 FntlDiv (s11 DmgrDiv (t11 Cohort (u11 invTEP (a1.1 fndTEP (a1.2) -0.007) 0.502) -0.591) -0.308) -0.017) -0.035	0.160 0.246 0.178 0.288 0.022 0.029	-0.044 2.038 -3.326 -1.070 -0.772 -1.219	0.965 0.042 0.001 0.285 0.440 0.223	-0.007 0.502 -0.591 -0.308 -0.017 -0.035	-0.007 0.366 -0.503 -0.169 -0.141 -0.277

Intercepts:						
•	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectScore	90.861	7.206	12.609	0.000	90.861	4.800
. RC	2.146	0.176	12.222	0.000	2.146	2.388
Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectScore	230.404	57.828	3.984	0.000	230.404	0.643
.RC	0.576	0.114	5.042	0.000	0.576	0.714

	Df	AIC	BIC	Chisq	Chisq diff	Df diff	Pr(>Chisq)
fitTEPPerf.2S.MG.AllCon	4	962.89	1056.2	4.1614			
fitTEPPerf.2S.MG	12	954.13	1027.8	11.3981	8.4569	8	0.3902

4.2.2 <u>Polynomial multi-group mediation: more control variables</u>

lavaan 0.6-3 ended normally after 166 iterations

Optimization method Number of free parameters	NLMINB 40		
Number of observations per group Ø 1	45 41		
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction	ML 8.474 14 0.863 (Mplus variant)	Robust 8.871 14 0.839 0.955	
Chi-square for each group:			
0 1	3.221 5.253	3.372 5.499	
Model test baseline model:			
Minimum Function Test Statistic Degrees of freedom P-value	113.682 46 0.000	120.321 46 0.000	
User model versus baseline model:			
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.268	1.000 1.227	
Robust Comparative Fit Index (CFI Robust Tucker-Lewis Index (TLI))	1.000 1.229	
Loglikelihood and Information Crite	ria:		
Loglikelihood user model (H0) Scaling correction factor for the MLR correction	-428.719	-428.719 0.983	
Loglikelihood unrestricted model Scaling correction factor for the MLR correction	(H1) -424.482	-424.482 0.976	
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BI	40 937.438 1035.612 C) 909.409	40 937.438 1035.612 909.409	
Root Mean Square Error of Approxima	tion:		
RMSEA 90 Percent Confidence Interval P-value RMSEA <= 0.05	0.000 0.000 0.079 0.908	0.000 0.000 0.883	0.090
Robust RMSEA 90 Percent Confidence Interval		0.000 0.000	0.085
Standardized Root Mean Square Resid	ual:		
SRMR	0.026	0.026	
Parameter Estimates:			
Information Observed information based on Standard Errors	Observed Hessian Robust.huber.white		

Regressions:		o .			o	o. 1 11
ProjectScore ~	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
Teamsiz FntlDiv DmgrDiv Cohort Ind_LS (v0) RC (b0)	1.239 -3.349 -0.974 -3.034 0 8.517 0 -4.438 0 -1.013	3.306 5.171 3.789 5.187 6.580 4.760 2.664	0.375 -0.648 -0.257 -0.585 1.294 -0.932 -0.380	0.708 0.517 0.797 0.559 0.196 0.351 0.704	1.239 -3.349 -0.974 -3.034 8.517 -4.438 -1.013	0.057 -0.126 -0.044 -0.097 0.236 -0.146 -0.065
Teamsiz (r0) FntlDiv (s0) DmgrDiv (t0) Cohort (u0) invTEP_ (a0.1) fndTEP_ (a0.2) inTEP (a0.3) invfn (a0.4) fnTEP (a0.5)	0 0.238 0 -0.244 0 0.158 0 -0.548 1 .574 1 .362 0 .438 0 -0.584 0 .041	0.157 0.173 0.151 0.182 0.517 0.352 0.171 0.151 0.071	1.518 -1.410 1.046 -3.018 -3.042 3.870 2.566 -3.866 0.584	0.129 0.296 0.003 0.002 0.000 0.010 0.000 0.559	0.238 -0.244 0.158 -0.548 -1.574 1.362 0.438 -0.584 0.041	0.169 -0.142 0.111 -0.272 -1.453 1.562 1.291 -1.789 0.137
Intercepts:						
.ProjectScore .RC	Estimate 72.384 3.009	Std.Err 8.133 0.414	z-value 8.901 7.276	P(> z) 0.000 0.000	Std.lv 72.384 3.009	Std.all 4.828 3.113
Variances:						
.ProjectScore .RC	Estimate 195.067 0.316	Std.Err 41.194 0.062	z-value 4.735 5.056	P(> z) 0.000 0.000	Std.1v 195.067 0.316	Std.all 0.868 0.338
Group 2 [1]:						
Regressions:						
ProjectScore ~	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
Teamsiz FntlDiv DmgrDiv Cohort Ind_LS (v1) Ind_SH (w1) RC (b1)	5.398 -1.616 3.327 -5.717 12.574) -6.246) -5.436	2.139 3.973 3.817 6.479 6.243 5.976 2.563	2.523 -0.407 0.872 -0.882 2.014 -1.045 -2.121	0.012 0.684 0.383 0.378 0.044 0.296 0.034	5.398 -1.616 3.327 -5.717 12.574 -6.246 -5.436	0.238 -0.055 0.133 -0.147 0.282 -0.157 -0.255
Teamsiz (r1) FntlDiv (s1) DmgrDiv (t1) Cohort (u1) invTEP_ (a1.1) fndTEP_ (a1.2) inTEP (a1.3) invfn (a1.4) fnTEP (a1.5)	0.152 0.560 -0.462 -1.083 -1.164 0.469 -0.429	0.087 0.177 0.180 0.235 0.316 0.331 0.209 0.335 0.175	1.756 3.167 -2.565 -0.840 -3.426 -3.518 2.245 -1.280 3.777	$\begin{array}{c} 0.079\\ 0.002\\ 0.010\\ 0.401\\ 0.001\\ 0.000\\ 0.025\\ 0.201\\ 0.000\\ \end{array}$	0.152 0.560 -0.462 -0.198 -1.083 -1.164 0.469 -0.429 0.662	0.143 0.408 -0.393 -0.108 -1.103 -1.139 1.522 -1.131 1.609
Intercepts:	F . ()		-		<u></u>	Cu d 13
.ProjectScore .RC	Estimate 85.673 3.197	Std.Err 7.431 0.245	z-value 11.529 13.028	P(> Z) 0.000 0.000	Std.1v 85.673 3.197	Std.all 4.479 3.558
Variances:						
.ProjectScore .RC	Estimate 245.357 0.362	Std.Err 57.299 0.092	z-value 4.282 3.939	P(> z) 0.000 0.000	Std.lv 245.357 0.362	Std.all 0.671 0.448

	Df	AIC	BIC	Chisq	Chisq	diff	Df	diff	Pr(>Chisq)
fitSEMpolyMid.MG.Perf.Free.Con	14	937.44	1035.6	8.4743					

fitSEMpolyMid.MG.Perf.FullMed.Free 22 9	927.21 1005.8 14.2469	6.5399	8	0.587
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4.3 Team performance: score of round one

The dependent variable in the reported model is calculated using the average score of both the first and the second evaluation round in the competition. In order to assure that we do not introduce a bias by including the scores of the second round (teams that passed onto the second round may for instance have received lower scores in that round, resulting in a lower average score than teams that dropped out after the first round), we performed a robustness check using only the scores of the first evaluation round. Both for the multi-group mediation model and the polynomial mediation, the alternative models returned the same results as the reported models, with similarly good fit measures.

4.3.1 <u>Multi-group mediation: score of round one</u>

lavaan 0.6-3 ended normally after 123 iterations

Optimization method Number of free parameters	NLMINB 30	
Number of observations per group 0 1	45 41	
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplus y	ML 9.836 12 0.630 variant)	Robust 11.055 12 0.524 0.890
Chi-square for each group:		
0 1	1.863 7.973	2.094 8.961
Model test baseline model:		
Minimum Function Test Statistic Degrees of freedom P-value	75.689 34 0.000	81.168 34 0.000
User model versus baseline model:		
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.147	1.000 1.057
Robust Comparative Fit Index (CFI) Robust Tucker-Lewis Index (TLI)		1.000 1.054
Loglikelihood and Information Criteria:		
Loglikelihood user model (H0) Scaling correction factor	-459.927	-459.927 0.997
Loglikelihood unrestricted model (H1) Scaling correction factor	-455.009	-455.009 0.966

for the	MLR co	rrection					
Number of free parameters30Akaike (AIC)979.853Bayesian (BIC)1053.484Sample-size adjusted Bayesian (BIC)958.832							30 53 84 32
Root Mean So	quare Ei	rror of Ap	proximati	on:			
RMSEA 90 Percent P-value RM	t Confid 1SEA <=	dence Inte 0.05	rval	0.00	0.000 0.131 0.714	0.0 0.0 0.6	00 00 0.152 06
Robust RMS 90 Percent	SEA t Confid	dence Inte	rval			0.0 0.0	00 00 0.137
Standardized	d Root N	Mean Squar	e Residua	1:			
SRMR					0.032	0.0	32
Parameter Es	stimates	s:					
Informatic Observed : Standard E	on informa [.] Errors	tion based	on R	obust.hub	Observed Hessian er.white		
Group 1 [0]:	:						
Regressions	:						
ScoreR1 ~ Ind_LS Ind_SH invTEP fndTEP RC RC ~ Teamsiz FntlDiv DmgrDiv Cohort invTEP fndTEP Intercepts: .ScoreR1 .RC Variances:	(v0) (w0) (c0.1) (c0.2) (b0) (r0) (s0) (t0) (u0) (a0.1) (a0.2)	Estimate 2.114 -8.932 0.229 -0.394 -0.517 0.304 -0.095 -0.053 -0.448 -0.096 0.037 Estimate 75.735 2.192 Estimate 239.679	Std.Err 7.938 6.124 0.625 0.262 3.912 0.194 0.194 0.180 0.156 0.233 0.020 0.014 Std.Err 7.817 0.191 Std.Err 50 564	z-value 0.266 -1.458 0.367 -1.501 -0.132 1.566 -1.722 -0.341 -1.922 -4.817 2.703 z-value 9.689 11.489 z-value 4.740	P(> z) 0.790 0.145 0.714 0.133 0.895 0.117 0.085 0.733 0.055 0.000 0.007 P(> z) 0.000 0.000 P(> z) 0.000	Std.lv 2.114 -8.932 0.229 -0.394 -0.517 0.304 -0.309 -0.053 -0.448 -0.096 0.037 Std.lv 75.735 2.192 Std.lv 239.679	Std.all 0.054 -0.269 0.100 -0.212 -0.030 0.216 -0.181 -0.038 -0.222 -0.712 0.339 Std.all 4.610 2.267 Std.all 0.888
.ScoreR1		239.679 0.429	50.564 0.081	4.740	0.000	239.679 0.429	0.888
Group 2 [1]	:	0.723	0.001	5.209	0.000	J.7 <i>LJ</i>	0.709
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
Ind_LS Ind_SH invTEP fndTEP RC RC ~	(v1) (w1) (c1.1) (c1.2) (b1)	10.140 -10.562 -0.089 -0.513 -8.099	7.726 8.053 0.524 0.481 2.998	1.312 -1.312 -0.170 -1.065 -2.702	0.189 0.190 0.865 0.287 0.007	10.140 -10.562 -0.089 -0.513 -8.099	0.192 -0.224 -0.029 -0.159 -0.321
Feams12 FntlDiv DmgrDiv Cohort invTEP fndTEP	(r1) (s1) (t1) (u1) (a1.1) (a1.2)	-0.007 0.502 -0.591 -0.308 -0.017 -0.035	0.160 0.246 0.178 0.288 0.022 0.029	-0.044 2.038 -3.326 -1.070 -0.772 -1.219	0.965 0.042 0.001 0.285 0.440 0.223	-0.007 0.502 -0.591 -0.308 -0.017 -0.035	-0.007 0.366 -0.503 -0.169 -0.141 -0.277

Intercepts:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ScoreR1	96.510	8.706	11.086	0.000	96.510	4.254
.RC	2.146	0.176	12.222	0.000	2.146	2.388
Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ScoreR1	401.961	84.716	4.745	0.000	401.961	0.781
.RC	0.576	0.114	5.042	0.000	0.576	0.714

Cannot compare chi-squares of models via anova, because models are not nested. An alternative investigation based on AIC shows us that the AICs of both models are very similar, implying a similar model fit (Kline, 2015).

4.3.2 <u>Polynomial multi-group mediation: score of round one</u>

lavaan 0.6-3 ended normally after 120 iterations

Optimization method Number of free parameters	NLMINB 32		
Number of observations per group 0 1	45 41		
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction	ML 16.982 22 0.764 (Mplus variant)	Robust 18.807 22 0.657 0.903	
Chi-square for each group:			
0 1	7.865 9.117	8.710 10.097	
Model test baseline model:			
Minimum Function Test Statistic Degrees of freedom P-value	112.874 46 0.000	121.389 46 0.000	
User model versus baseline model:			
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.157	1.000 1.089	
Robust Comparative Fit Index (CFI Robust Tucker-Lewis Index (TLI))	1.000 1.086	
Loglikelihood and Information Crite	ria:		
Loglikelihood user model (H0) Scaling correction factor for the MLR correction	-444.908	-444.908 0.993	
Loglikelihood unrestricted model Scaling correction factor for the MLR correction	(H1) -436.416	-436.416 0.956	
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BI	32 953.815 1032.354 C) 931.392	32 953.815 1032.354 931.392	
Root Mean Square Error of Approxima	tion:		
RMSEA 90 Percent Confidence Interval P-value RMSEA <= 0.05	0.000 0.000 0.090 0.849	0.000 0.000 0.751	0.110
Robust RMSEA 90 Percent Confidence Interval		0.000 0.000	0.100
Standardized Root Mean Square Resid	ual:		
SRMR	0.040	0.040	
Parameter Estimates:			
Information Observed information based on Standard Errors	Observed Hessian Robust.huber.white		

Pagracaiona	_						
Regressions		Estimate	Std.Err	z-value	P(> 7)	Std. 1v	Std.all
ScoreR1 ~		Lotinate	otu.En	2 Varae	101217	000.11	000.011
Ind_LS	(v0)	3.381	7.209	0.469	0.639	3.381	0.085
Ind_SH	(w0)	-7.761	5.485	-1.415	0.157	-7.761	-0.233
RC	(b0)	-0.931	2.407	-0.387	0.699	-0.931	-0.055
KL ~ Teomsiz	(r0)	0 238	0 157	1 518	Q 120	0 238	0 160
FntlDiv	(50)	-0.244	0.173	-1.410	0.129	-0.244	-0.142
DmgrDiv	(t0)	0.158	0.151	1.046	0.296	0.158	0.111
Cohort	(u0)	-0.548	0.182	-3.018	0.003	-0.548	-0.272
invTEP_	(a0.1)	-1.574	0.517	-3.042	0.002	-1.574	-1.453
fndTEP_	(a0.2)	1.362	0.352	3.870	0.000	1.362	1.562
initP	(a0.3)	0.438	0.1/1	2.566	0.010	0.438	1.291
fnTFP	(a0.4)	-0.584	0.151	-3.800 0.584	0.000	-0.584 0.041	-1.789
	(00.5)	0.011	0.071	0.501	0.555	0.011	0.157
Intercepts:				_			
C D 1		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
. Scoreki		75.828	6.708 0.717	11.305	0.000	75.828	4.011
.ne		5.005	0.114	1.210	0.000	5.005	5.115
Variances:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ScoreR1		248.294	53.600	4.632	0.000	248.294	0.918
.RC		0.316	0.062	5.050	0.000	0.316	0.338
Group 2 [1]:	:						
Regressions							
Regi 03310113	•	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ScoreR1 ~					,		
Ind_LS	(v1)	12.396	7.797	1.590	0.112	12.396	0.233
Ind_SH	(w1)	-7.124	7.334	-0.971	0.331	-7.124	-0.150
	(bl)	-7.160	3.005	-2.382	0.017	-7.160	-0.281
Teamsiz	(r1)	0.152	0.087	1.756	0.079	0.152	0.143
FntlDiv	(s1)	0.560	0.177	3.167	0.002	0.560	0.408
DmgrDiv	(t1)	-0.462	0.180	-2.565	0.010	-0.462	-0.393
Cohort	(u1)	-0.198	0.235	-0.840	0.401	-0.198	-0.108
invTEP_	(a1.1)	-1.083	0.316	-3.426	0.001	-1.083	-1.103
fndIEP_	(a1.2)	-1.164	0.331	-3.518	0.000	-1.164	-1.139
iniep	(a1.3)	0.469	0.209	2.245	0.025	0.469	1.522
fnTFP	(a1.4) (a1.5)	0.662	0.335	3.777	0.201	0.662	1.609
	(41.5)	0.002	0.170	5.777	0.000	0.002	1.005
Intercepts:				_			
0 54		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ScoreR1		92.689	8.135	11.394	0.000	92.689	4.051
. KC		5.197	0.245	13.020	0.000	5.197	5.000
Variances:							
		Estimato	Std Err	z-value	P(> -1)	Std 1v	Std 211
		LStimate	Jtu.LII	Z varuc	(/ 2)	510.10	Stu.all
.ScoreR1		414.711	78.493	5.283	0.000	414.711	0.792

Cannot compare chi-squares of models via anova, because models are not nested. An alternative investigation based on AIC shows us that the AICs of both models are very similar, implying a similar model fit (Kline, 2015).

4.4 Control for start-up experience

We also verified whether the level of relationship conflict or team performance differs between teams with or without prior start-up experience. We therefore inserted a dummy control variable scoring 1 if at least one team member had founded at least 1 company before, and 0 otherwise. Conclusions based on these models (one for multi-group mediation model, and one for polynomial mediation) were the same as those for the reported models, with insignificant effects from prior start-up experience on relationship conflict, and on performance.

4.4.1 <u>Multi-group mediation: control for start-up experience</u>

lavaan 0.6-3 ended normally after 135 iterations

Optimization method Number of free parameters	NLMINB 34	
Number of observations per group 0 1	45 41	
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplus	ML 12.480 12 0.408 variant)	Robust 14.502 12 0.270 0.861
Chi-square for each group:		
0 1	2.391 10.089	2.778 11.723
Model test baseline model:		
Minimum Function Test Statistic Degrees of freedom P-value	82.597 38 0.000	87.118 38 0.000
User model versus baseline model:		
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	0.989 0.966	0.949 0.839
Robust Comparative Fit Index (CFI) Robust Tucker-Lewis Index (TLI)		0.954 0.854
Loglikelihood and Information Criteria:		
Loglikelihood user model (H0) Scaling correction factor	-446.264	-446.264 1.027
Loglikelihood unrestricted model (H1) Scaling correction factor for the MLR correction	-440.024	-440.024 0.984
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BIC)	34 960.529 1043.977 936.704	34 960.529 1043.977 936.704

Root Mean Square Error of Approximation:

RMSEA 90 Percent Confi P-value RMSEA <=	dence Inte 0.05	rval	0.00	0.031 0 0.160 0.507	0.0 0.0 0.3	70 00 0.186 64
Robust RMSEA 90 Percent Confi	dence Inte	rval			0.0 0.0	65 00 0.165
Standardized Root	Mean Squar	e Residua	1:			
SRMR				0.033	0.0	33
Parameter Estimate	s:					
Information Observed informa Standard Errors	tion based	on R	obust.hub	Observed Hessian er.white		
Group 1 [0]:						
Regressions:	Falleria		.1 .			Cu l . 11
ProjectScore ~	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
StrtExp (sta0) Ind_LS (v0) Ind_SH (w0) invTEP (c0.1) fndTEP (c0.2) RC (b0)	-2.114 8.998 -4.385 -0.333 -0.026 -1.339	5.136 6.699 5.200 0.506 0.237 3.606	-0.412 1.343 -0.843 -0.658 -0.110 -0.371	0.681 0.179 0.399 0.511 0.912 0.710	-2.114 8.998 -4.385 -0.333 -0.026 -1.339	-0.070 0.250 -0.144 -0.158 -0.015 -0.086
StrtExp (stb0) Teamsiz (r0) FntlDiv (s0) DmgrDiv (t0) Cohort (u0) invTEP (a0.1) fndTEP (a0.2)	0.236 0.276 -0.314 -0.024 -0.409 -0.091 0.032	0.236 0.210 0.168 0.152 0.242 0.022 0.015	1.000 1.315 -1.873 -0.156 -1.694 -4.151 2.085	0.317 0.189 0.061 0.876 0.090 0.000 0.037	0.236 0.276 -0.314 -0.024 -0.409 -0.091 0.032	0.122 0.196 -0.184 -0.017 -0.203 -0.669 0.296
Intercepts:		o =	,		0.11	o
.ProjectScore .RC	2.054 Estimate	6.779 0.251	z-value 10.675 8.175	P(> Z) 0.000 0.000	5td.1V 72.359 2.054	4.828 2.125
Variances:			_			
.ProjectScore .RC	Estimate 196.313 0.418	Std.Err 43.641 0.090	z-value 4.498 4.651	P(> z) 0.000 0.000	Std.lv 196.313 0.418	Std.all 0.874 0.447
Group 2 [1]:						
Regressions:		a. 1 =			a.]	a. 11
ProjectScore ~ StrtExp (sta1) Ind_LS (v1) Ind_SH (w1) invTEP (c1.1) fndTEP (c1.2) RC (b1)	Estimate -0.967 11.191 -7.332 0.106 -0.502 -7.285	Std.Err 5.692 6.257 6.350 0.434 0.413 2.511	z-value -0.170 1.789 -1.155 0.245 -1.216 -2.902	P(> z) 0.865 0.074 0.248 0.806 0.224 0.004	-0.967 11.191 -7.332 0.106 -0.502 -7.285	Std.all -0.025 0.253 -0.186 0.041 -0.186 -0.345
RC ~ StrtExp (stb1) Teamsiz (r1) FntlDiv (s1) DmgrDiv (t1) Cohort (u1) invTEP (a1.1) fndTEP (a1.2)	-0.115 0.020 0.510 -0.580 -0.293 -0.018 -0.033	0.251 0.166 0.248 0.175 0.292 0.022 0.029	-0.458 0.119 2.061 -3.325 -1.003 -0.817 -1.134	0.647 0.906 0.039 0.001 0.316 0.414 0.257	-0.115 0.020 0.510 -0.580 -0.293 -0.018 -0.033	-0.064 0.018 0.372 -0.494 -0.160 -0.149 -0.260
Intercepts:						
.ProjectScore .RC	Estimate 89.033 2.195	Std.Err 7.975 0.206	z-value 11.163 10.655	P(> z) 0.000 0.000	Std.lv 89.033 2.195	Std.all 4.694 2.443

Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectScore	265.627	64.366	4.127	0.000	265.627	0.738
.RC	0.574	0.114	5.028	0.000	0.574	0.711

lavaan 0.6-3 ended normally after 129 iterations

Optimization method Number of free parameters	NLMINB 34		
Number of observations per group Ø 1	45 41		
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction	ML 18.534 24 0.776 (Mplus variant)	Robust 19.786 24 0.709 0.937	
Chi-square for each group:			
0 1	5.398 13.137	5.762 14.024	
Model test baseline model:			
Minimum Function Test Statistic Degrees of freedom P-value	118.357 50 0.000	123.303 50 0.000	
User model versus baseline model:			
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	1.000 1.167	1.000 1.120	
Robust Comparative Fit Index (CFI Robust Tucker-Lewis Index (TLI))	1.000 1.117	
Loglikelihood and Information Crite	ria:		
Loglikelihood user model (H0) Scaling correction factor for the MLR correction	-431.411	-431.411 1.022	
Loglikelihood unrestricted model Scaling correction factor for the MLR correction	(H1) -422.144	-422.144 0.986	
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BI	34 930.823 1014.271 C) 906.999	34 930.823 1014.271 906.999	
Root Mean Square Error of Approxima	tion:		
RMSEA 90 Percent Confidence Interval P-value RMSEA <= 0.05	0.000 0.000 0.086 0.861	0.000 0.000 0.801	0.099
Robust RMSEA 90 Percent Confidence Interval		0.000 0.000	0.093
Standardized Root Mean Square Resid	ual:		
SRMR	0.033	0.033	
Parameter Estimates:			
Information Observed information based on Standard Errors	Observed Hessian Robust.huber.white		

Regressions:				_			
D		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSco	ore ~	2 070	F 204	0 201	0 000	2 070	0 000
StrtExp	(-2.070	5.294	-0.391	0.696	-2.070	-0.069
	(v_0)	7.521	0.200	1.212	0.220	7.521	0.209
ING_SH	(WØ)	-5.308	4.811	-1.103	0.270	-5.308	-0.175
RC RC	(00)	0.164	2.678	0.061	0.951	0.164	0.011
RC_~ .	(0 4 5 7	4 540			
leamsız	(r0)	0.238	0.15/	1.518	0.129	0.238	0.169
FntIDiv	(s0)	-0.244	0.173	-1.410	0.159	-0.244	-0.142
DmgrDiv	(t0)	0.158	0.151	1.046	0.296	0.158	0.111
Cohort	(u0)	-0.548	0.182	-3.018	0.003	-0.548	-0.272
invTEP_	(a0.1)	-1.574	0.517	-3.042	0.002	-1.574	-1.453
fndTEP_	(a0.2)	1.362	0.352	3.870	0.000	1.362	1.562
inTEP	(a0.3)	0.438	0.171	2.566	0.010	0.438	1.291
invfn	(a0.4)	-0.584	0.151	-3.866	0.000	-0.584	-1.789
fnTEP	(a0.5)	0.041	0.071	0.584	0.559	0.041	0.137
Intercepts:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	70.173	5.105	13.746	0.000	70.173	4,692
.RC		3.009	0.414	7.276	0.000	3.009	3.113
Variances:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	199.713	46.072	4.335	0.000	199.713	0.893
.RC		0.316	0.062	5.056	0.000	0.316	0.338
Group 2 [1]:							
Regressions:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSco	ore ~						
StrtExp		-2.251	5.405	-0.417	0.677	-2.251	-0.059
Ind_LS	(v1)	13.030	6.426	2.028	0.043	13.030	0.292
Ind_SH	(w1)	-4.866	5.980	-0.814	0.416	-4.866	-0.122
RC	(b1)	-6.712	2.557	-2.624	0.009	-6.712	-0.315
RC ~							
Teamsiz	(r1)	0.152	0.087	1.756	0.079	0.152	0.143
FntlDiv	(s1)	0.560	0.177	3.167	0.002	0.560	0.408
DmgrDiv	(t1)	-0.462	0.180	-2.565	0.010	-0.462	-0.393
Cohort	(u1)	-0.198	0.235	-0.840	0.401	-0.198	-0.108
invTEP_	(a1.1)	-1.083	0.316	-3.426	0.001	-1.083	-1.103
fndTEP_	(a1.2)	-1.164	0.331	-3.518	0.000	-1.164	-1.139
inTEP	(a1.3)	0.469	0.209	2.245	0.025	0.469	1.522
invfn	(a1.4)	-0.429	0.335	-1.280	0.201	-0.429	-1.131
fnTEP	(a1.5)	0.662	0.175	3.777	0.000	0.662	1.609
Intercepts:			o	,		o	o
D		Estimate	Std.Err	z-value	P(> Z)	Std.lv	Std.all
.ProjectS	core	87.100	/.940	10.970	0.000	87.100	4.550
. RC		3.197	0.245	13.028	0.000	3.197	3.558
Variances:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	272.657	62.137	4.388	0.000	272.657	0.744
.RC		0.362	0.092	3.939	0.000	0.362	0.448

4.5 Diversity in individual entrepreneurial passions

We analyzed whether TEP is the adequate measure when analyzing the level of relationship conflict and performance of a new venture team, or whether there may be alternative explanations. During our data collection, we also gathered information about the individual-level entrepreneurial passions. This enabled us to investigate the impact of the diversity of individual entrepreneurial passions on relationship conflict and team performance. We therefore investigated, whether relationship conflict and team performance could be explained by diversity in individual entrepreneurial passions. For both the multi-group mediation and the polynomial mediation models, we tested the effect of diversity in individual entrepreneurial passion on relationship conflict and team performance, rather than the effect of TEP. Both the linear and the polynomial multi-group mediation models with the diversity variables showed poor fit (e.g. CFI_{linear}=0.855, and CFI_{polynomial}=0.592). The results outlined below indicate that TEP rather than diversity in individual entrepreneurial passions plays an important role for relationship conflict and team performance.

4.5.1 <u>Multi-group mediation: diversity instead of TEP</u>

lavaan	0.6-3	ended	normally	after	125	iterations
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Optimization method Number of free parameters	NLMINB 30	
Number of observations per group 0 1	45 41	
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction (Mplus	ML 14.834 12 0.251 s variant)	Robust 16.907 12 0.153 0.877
Chi-square for each group:		
0 1	4.628 10.206	5.275 11.632
Model test baseline model:		
Minimum Function Test Statistic Degrees of freedom P-value	63.697 34 0.002	67.870 34 0.000

User model versus	baseline m	odel:				
Comparative Fit Tucker-Lewis Ind	Index (CFI ex (TLI))		0.905 0.730	0.8 0.5	55 90
Robust Comparati Robust Tucker-Le	ve Fit Ind wis Index	ex (CFI) (TLI)			0.8 0.6	65 16
Loglikelihood and	Informatio	n Criteri	a:			
Loglikelihood us Scaling correcti for the MLR co	er model (on factor rrection	H0)		-456.891	-456.8 1.0	91 20
Loglikelihood un Scaling correcti for the MLR co	restricted on factor rrection	model (H	1)	-449.474	-449.4 0.9	74 79
Number of free p Akaike (AIC) Bayesian (BIC) Sample-size adju	arameters sted Bayes	ian (BIC)		30 973.782 1047.413 952.761	973.7 1047.4 952.7	30 82 13 61
Root Mean Square F	rror of An	proximati	on:			
RMSEA 90 Percent Confi P-value RMSEA <=	dence Inte 0.05	rval	0.00	0.074 000.181 0.341	0.0 0.0 0.2	98 00 0.203 36
Robust RMSEA 90 Percent Confidence Interval						91 00 0.184
Standardized Root	Mean Squar	e Residua	1:			
SRMR				0.042	0.0	42
Parameter Estimate	s:					
Information Observed informa Standard Errors	tion based	on R	obust.hub	Observed Hessian per.white		
Group 1 [0]:						
Regressions:	Estimate	Std. Frr	z-value	P(> 7)	Std. 1v	Std.all
ProjectScore ~	C 102	E 674	1 000	0.077	6 162	0 171
Ind_LS (V0) Ind_SH (w0)	-4.412	5.674 4.841	-0.911	0.277	-4.412	-0.145
invdiv (c0.1)	0.412	0.524	0.785	0.432	0.412	0.119
RC (b0)	-1.189	2.148	-0.553	0.131	-1.189	-0.077
RC ~	0 306	0 215	1 621	0 105	0 306	0 281
FntlDiv (s0)	-0.265	0.245	-1.121	0.262	-0.265	-0.155
DmgrDiv (t0)	-0.155	0.195	-0.793	0.428	-0.155	-0.109
invdiv (a0.1)	-0.463 0.047	0.292	1.277	0.112	-0.463 0.047	-0.229 0.212
fnddiv (a0.2)	0.005	0.026	0.186	0.852	0.005	0.031
Intercepts:			_			
.ProjectScore .RC	Estimate 72.032 2.210	Std.Err 5.966 0.253	z-value 12.075 8.741	P(> z) 0.000 0.000	Std.lv 72.032 2.210	Std.all 4.808 2.287
Variances:	F		-		<u></u>	Cul 17
.ProjectScore	Estimate 181.402	Std.Err 34.781	z-value 5.215	P(> z) 0.000	Std.lv 181.402	Std.all 0.808
.RC	0.727	0.179	4.067	0.000	0.727	0.778

Group 2 [1]:

Regressions:

		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSc	ore ~						
Ind_LS	(v1)	14.032	7.483	1.875	0.061	14.032	0.320
Ind_SH	(w1)	-4.268	5.425	-0.787	0.431	-4.268	-0.109
invdiv	(c1.1)	0.610	0.511	1.194	0.232	0.610	0.145
fnddiv	(c1.2)	0.975	0.417	2.335	0.020	0.975	0.269
RC	(b1)	-8.385	2.532	-3.312	0.001	-8.385	-0.400
RC ~							
Teamsiz	(r1)	-0.075	0.155	-0.483	0.629	-0.075	-0.070
FntlDiv	(s1)	0.348	0.268	1.297	0.195	0.348	0.254
DmgrDiv	(t1)	-0.517	0.153	-3.379	0.001	-0.517	-0.440
Cohort	(u1)	-0.249	0.274	-0.910	0.363	-0.249	-0.137
invdiv	(a1.1)	0.044	0.033	1.318	0.188	0.044	0.218
fnddiv	(a1.2)	0.032	0.018	1.758	0.079	0.032	0.183
Intercepts:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.Project	Score	88.267	7.059	12.504	0.000	88.267	4.689
.RC		2.119	0.201	10.569	0.000	2.119	2.359
Variances:				-			
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.Project	Score	244.001	49.568	4.923	0.000	244.001	0.689
.RC		0.623	0.179	3.487	0.000	0.623	0.772

lavaan 0.6-3 ended normally after 141 iterations

Optimization method Number of free parameters	NLMINB 32		
Number of observations per group 0 1	45 41		
Estimator Model Fit Test Statistic Degrees of freedom P-value (Chi-square) Scaling correction factor for the Yuan-Bentler correction	ML 33.912 22 0.050 • (Mplus variant)	Robust 42.343 22 0.006 0.801	
Chi-square for each group:			
0 1	15.113 18.799	18.870 23.473	
Model test baseline model:			
Minimum Function Test Statistic Degrees of freedom P-value	82.169 46 0.001	95.869 46 0.000	
User model versus baseline model:			
Comparative Fit Index (CFI) Tucker-Lewis Index (TLI)	0.671 0.311	0.592 0.147	
Robust Comparative Fit Index (CFI Robust Tucker-Lewis Index (TLI))	0.619 0.203	
Loglikelihood and Information Crite	eria:		
Loglikelihood user model (H0) Scaling correction factor for the MLR correction	-457.194	-457.194 0.970	
Loglikelihood unrestricted model Scaling correction factor for the MLR correction	(H1) -440.238	-440.238 0.901	
Number of free parameters Akaike (AIC) Bayesian (BIC) Sample-size adjusted Bayesian (BI	32 978.389 1056.928 C) 955.966	32 978.389 1056.928 955.966	
Root Mean Square Error of Approxima	tion:		
RMSEA 90 Percent Confidence Interval P-value RMSEA <= 0.05	0.112 0.000 0.183 0.103	0.147 0.069 0.027	0.220
Robust RMSEA 90 Percent Confidence Interval		0.131 0.069	0.190
Standardized Root Mean Square Resid	lual:		
SRMR	0.051	0.051	
Parameter Estimates:			
Information Observed information based on Standard Errors	Observed Hessian Robust.huber.white		

Regressions:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSco	ore ~	7 470	6 201	1 100	0 005	7 470	0 000
ING_LS	(V0) (w0)	7.4/6	6.291 4 720	1.188	0.235	/.4/6 _E 107	0.208
	(we) (be)	-0.210	4.720	-0.102	0.200	-0.210	-0.109
RC ~	(00)	-0.219	2.124	-0.103	0.910	-0.219	-0.014
Teamsiz	(r0)	0.382	0.247	1.544	0.123	0.382	0.270
FntlDiv	(s0)	-0.122	0.248	-0.490	0.624	-0.122	-0.071
DmgrDiv	(t0)	-0.241	0.199	-1.210	0.226	-0.241	-0.170
Cohort	(u0)	-0.392	0.283	-1.385	0.166	-0.392	-0.194
invdiv	(a0.1)	0.056	0.033	1.691	0.091	0.056	0.250
fnddiv	(a0.2)	0.008	0.030	0.257	0.797	0.008	0.051
invdv_s	(a0.3)	-0.008	0.005	-1.504	0.133	-0.008	-0.201
invfnd_	(a0.4)	0.012	0.004	2.762	0.006	0.012	0.370
fnddv_s	(a0.5)	-0.002	0.003	-0.585	0.558	-0.002	-0.086
Intercents							
intercepts.		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	69.864	5.159	13.543	0.000	69.864	4.668
.RC		2.262	0.282	8.021	0.000	2.262	2.341
Variances:			a. 1 =		-	a	a. 1 11
D		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.Projects	score	200.619	44.495	4.509	0.000	200.619	0.896
.RC		0.638	0.149	4.278	0.000	0.638	0.683
Group 2 [1]:							
Regressions:				_			
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
ProjectSco	ore ~	12 205	6 221	0 100	0 000	10 005	0 000
ING_LS	(VI) (w1)	13.305	6.221 5.701	2.139	0.032	13.305	0.299
	(WI) (b1)	-4.590	2./01	-0.795	0.427	-4.590	-0.110
	(01)	-0.508	2.323	-2.003	0.009	-0.508	-0.309
Teamsiz	(r1)	-0.115	0.166	-0.693	0.488	-0.115	-0.108
FntlDiv	(s1)	0.335	0.272	1.228	0.219	0.335	0.244
DmgrDiv	(t1)	-0.556	0.177	-3.139	0.002	-0.556	-0.473
Cohort	(u1)	-0.196	0.296	-0.663	0.508	-0.196	-0.108
invdiv	(a1.1)	0.074	0.031	2.352	0.019	0.074	0.369
fnddiv	(a1.2)	0.037	0.025	1.469	0.142	0.037	0.211
invdv_s	(a1.3)	-0.003	0.003	-1.023	0.306	-0.003	-0.158
invfnd_	(a1.4)	0.007	0.008	0.898	0.369	0.007	0.155
fnddv_s	(a1.5)	-0.002	0.002	-0.918	0.359	-0.002	-0.097
Tatagaata							
intercepts:		Estimato	Std Err	7-10-100	P(> -1)	S+d 1v	Std 211
Project	Score	LSL1111dL€ 85 /122	6 607	2-vaiue 12 757	r (~ ~) 0 000	85 /22	Δ 175
RC		2 230	0.037	8 200	0.000	2 230	7.475
		2.250	0.272	0.200	0.000	2.250	2.701
Variances:							
		Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.ProjectS	Score	273.883	64.610	4.239	0.000	273.883	0.751
.RC		0.582	0.174	3.347	0.001	0.582	0.720