

How do team learning behaviour and team innovativeness influence business planning success?

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ABSTRACT

This research paper examines the potential influence of both team learning behaviour and team innovativeness on business planning success. Drawing on previous research and empirical data collected from 13 groups of students and 2 experts in the field of business planning, this study shows that both independent variables team learning behaviour and team innovativeness are not significantly related to business planning success. Although mentioned variables do not seem to share a relation with business planning success, one component of team learning behaviour was found to be positively significant (reflection on outcomes) and this by itself may warrant future research. However, it may prove worthwhile to research the overall question examined in this paper once again if the research limitations we were confronted with are properly dealt with. Practically speaking our results may prompt entrepreneurs to refrain from focusing on team learning behaviour or team innovativeness as a possible way to improve their business planning success.

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Keywords

team learning behaviour, team innovativeness, business planning success, team work, firm success,

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1. INTRODUCTION

In today's highly competitive business environment that sees constantly changing customer requirements companies need to show appropriate ability to adapt and innovate. As such companies need to have the right staff members who offer flexibility, innovation and work well in teams that can adjust the business strategy and associated business plan as and when required.

Many studies have been published about both team learning and innovation. Notable studies on innovation include the one by (Jong et al. (2010) who researched into the understanding of innovative work behaviour (IWB) at the level of individuals in organizations. They found that innovative behaviours of individuals are crucial to continuous improvement of business performance. Jong et al., however, focused on individuals in an organization which seems to be a trend among research papers on innovative work behaviour, emphasis is placed on the individual opposed to teams, and this is where the research gap lies. No research was carried out on the innovativeness of teams, their behaviours and their influence on business planning success and this paper attempts to address this gap.

Another research on innovative work behaviour is for example (Jin et al. (2014). This work's aim was to identify human capital attributes in teams and link it to new venture performance. Contrary to many studies that focus on individuals in organizations, this research focused on teams. The data Jin et al. (2014) gathered may have signified the importance of human capital in teams with regards to the new venture performance, but they did not assess the team's human capital with regards to firm-level success indicators. This is another clear research gap, and therefore this paper aims to fill the uncovered issues by analysing team innovativeness to assess its influence on business planning success.

There have been studies that strongly suggest that team learning does not influence performance but in fact may be inefficient or worrisome (Lounamaa & March. 1987; March, 1991; Levinthal & March, 1993). Another study, (Bunderson & Sutcliffe. (2003) took these previous studies into account when focusing on team learning orientation with its relation to business unit performance. Despite noting that studies such as (Edmondson. (1999) considered team performance to be a result of multiple factors including team learning they too sided with mentioned strong cases suggesting that too much team learning focus can in fact compromise efficiency. Although these negative cases may prompt some to refrain from further research, still many different studies found that there are positive effects learning (organisational) has on business performance (Fiol and Lyles. 1985; Levitt and March. 1988; Dogson, 1993; Dixon, 1994; Nevis et al. 1995; Lei et al. 1999; Bontis et al. 2002). These studies present positive relationships between organizational learning and business performance, but do not focus solely on team learning. As these various researches seem to present

conflicting results in terms of the effects of team learning on company performance, further research into this seems well justified, which this paper tries to cover.

Another notable study published with regards to team learning (Edmondson. (1999) had similar conclusions with those suggesting a positive relationship. Edmondson (1999) looked at the relationship between team psychological safety and learning behaviour and found that the relationship between psychological safety and learning behaviour had a large amount of empirical support. Edmondson's paper focused mostly on the link between psychological safety and team learning and although team performance in Edmondson's paper is often mentioned as a by-product of the link between these two factors, it is not explicitly researched or analysed. This is a prominent gap in research and again seems to justify research on the influence of team learning behaviour on business planning success.

(Savelsbergh. (2009) is another key figure in terms of team learning. Their paper focused on team learning supporting effective teamwork. They produced a measurement system for team learning behaviour and concluded that they could use their instrument successfully to determine team learning behaviours. Savelsbergh (2009) focused mostly on the production of this instrument and had little to say about actual effective teamwork, other than that the tool could improve it. Like Edmondson, Savelsbergh did not relate team learning behaviour to business planning success which provides a similar research gap.

This research paper will be analysing team learning behaviour and team innovativeness in relation to business planning success and will aim to capitalize on the various research gaps mentioned.

Assessing mentioned research papers led to the formation of the following research question:

How do team learning behaviour and team innovativeness influence business planning success?

Therefore, the aim of this paper is to analyse the potential influence of team learning behaviour and team innovativeness on business planning success. First, in chapter two we assess existing literature and relevant studies in support of this paper and in addition come to definitions of the independent variables team innovativeness and team learning. We also define the dependent variable business planning success and subsequently the link both team learning behaviour and team innovativeness have with the independent variable which results in the formulated hypotheses. Following this literature review we discuss the method section in chapter three where we report our sample of respondents, develop and present our measurement scales, present the Cronbach alpha and discuss our analytical strategy. In the fourth chapter data analysis, we focus on our collected and processed data and display our results along with decisions on the significance of data. Finally, in chapter five we discuss all findings, reflect our findings on previous research papers, give recommendations for future

improvement and mention theoretical as well as practical implications of our research.

2. LITERATURE REVIEW

Many studies have been published with regards to factors that have an influence on the performance of companies like for instance team composition, team work, team learning and team behaviour as well as team innovativeness. Relevant influence is normally reviewed on a per factor basis as can be derived from the various research papers that have been used in composing this paper.

2.1 Team innovativeness

Previous research on the characteristics of individuals and teams has confirmed their importance with regards venture performance. For example (Jin et al. (2014) restate the following words published by (Unger et al. (2011): "Human capital attributes have been identified as critical resources for entrepreneurial success". This quote by Unger et al however, was in reference to individuals, and for this reason Jin et al stated that they planned to extend their research on human capital by looking at teams and their effect on new venture performance. Human capital was defined as the team's education, experience, knowledge and skills. What Jin et al managed to gather in terms of data and results may signify the importance of human capital in teams with regards to a new venture performance but they did not assess the importance of a team's human capital with regards to the long-term success of a business.

(Jong et al. (2010) stated in their research that the understanding of innovative work behaviour (IWB) and the ability to measure it were still relatively unexplored. They are quoted as saying "we focus on innovation at the level of individuals in organizations. Individuals' actions are of crucial importance for continuous innovation and improvement." They wanted to increase their understanding of IWB and improve its measurement. They were unable to fully explain the impacts IWB has on continuous innovation and improvement.

Whereas research has now been carried out to attempt to fill gaps in knowledge i.e. Jin et al (2014) focusing on teams instead of individuals in relation to human capital attributes and their influence on new venture performance and Jong et al (2010) researching innovative work behavior and ways to measure it there have been no severe breakthroughs in knowledge. Jin et al (2014) focused on the influence of human capital on the short-term performance of a new venture rather than long-term and Jong et al., was unable, despite extensive work to report significant findings.

This paper will take into account the considerable amount of research presented in both these papers and build upon uncovered issues to analyze team innovativeness and to assess its influence on business planning success.

In order to appropriately define team innovativeness, reference is made to a research paper by (Farr and Ford. (1990) which states: "IWB is an individual's behaviour

that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures.

Although Farr and Ford focus on the innovation shown by individuals rather than teams their definition was still considered useful to come to the following definition for team innovativeness, which factor is focused on in this paper: *Two or more people working towards a common goal while contemplating new and useful ideas, processes, products or procedures.*

2.2 Team learning behaviour

(Edmondson. 1999) was fairly early in looking into team learning behaviour. Edmondson looked at the relationship between team psychological safety and learning behavior and stated: "Team psychological safety affects learning behavior, which in turn affects team performance". Edmondson found that the relationship between psychological safety and learning behavior had a large amount of empirical support. Edmondson is able to confidently state that there is a relationship between the two factors psychological safety and team learning behavior. Edmondson is quoted stating "Team members' own descriptions, taken from different types of teams and settings, illustrated how a climate of safety and supportiveness enabled them to embrace error" and goes on to mention that this led to better performance.

Edmondson's paper focused mostly on the link between psychological safety and team learning and although team performance is often mentioned as a byproduct of the link between these two factors, it is not explicitly researched or analysed.

(Savelsbergh et al. (2009) is another paper worthy of mention in regard to team learning. Savelsbergh et al built their research paper on the basis that the importance of teamwork on organizational success has been a commonly discussed matter for more than a decade. They go on to state "Effective teamwork can only be sustained, however, if it is supported by a process of team learning". The aim behind their research paper was to create a measurement instrument for team learning behaviours and they were successful in that they developed an instrument that indeed could be used to determine team learning behaviors as part of further research. Like Edmondson (1999), Savelsbergh (2009) does not clearly relate team learning behaviour to business planning success. This reflects a clear gap in the research for team learning behaviour. However, the relevant explanations given and measurement instrument created have been helpful in further analysing data to come to possible conclusions on the link between team learning behaviour and business planning success.

(Lynn et al. (1999) too found a gap in the research which would require future study. They argued that apart from team learning within your team it is also fair to expect that teams learn from people external to their team e.g. other teams, competitors and customers. This is the point

that prompted Lynn et al., to come to the following question and suggestion for research. “How can teams translate this external information into actionable knowledge? This question should be addressed in future research.”.

All three above mentioned papers provide research gaps. (Edmondson. (1999) does not explicitly research or analyze the influence of team learning on team performance. (Savelsbergh. (2009) does not clearly relate team learning behaviour to business planning success and (Lynn. (1999) points out the gap in research on a team’s ability to learn from external sources. As such, this research paper is analyzing team learning behaviour in its full form and will aim to capitalize on these gaps in the research.

In order to appropriately define team learning behaviour, reference will be made to (Savelsbergh. (2009). Savelsbergh split the definition of team learning in two, one definition for team and one for learning. They defined a team (expressed simply) as a distinguishable set of two or more people who are assigned specific roles or functions and work towards a common goal/object/mission. Learning was defined as an action instead of an outcome, which “comprises the process of acquiring knowledge through experience, which leads to a change in behavior.”

From these definitions, team learning behaviour is defined as:

Two or more people working towards a common goal and through experience on their journey, acquiring knowledge, leading to a change in behaviour which could be valuable for the team.

2.3 Defining the dependent variable Business planning success

Business planning success refers to the success of a team/firm in gaining venture capitalist investment. Venture capitalists have strict criteria through which they assess potential investments. A research paper by (Sharma. (2015) goes into much further detail on the criteria: “(1) deal origination - identifying potential firm; (2) deal screening - reviewing proposals particularly in technology, product and scope of market; (3) deal evaluation – assessment of a business plan (risk and return); (4) deal structuring – negotiating and mutually establishing VC agreement and (5) post-investment activities – providing value-added activities.”

Out of the above criteria mentioned by (Sharma. (2015) this paper will use the business plan in step (3) and the criteria used to assess them. This paper looks into business planning success and although the success factor has not been mentioned explicitly in this paper, it is self-explanatory. The success factor means that if an individual, team or organization approaches venture capitalists with their business plan and receives the investment their business plan has been a success.

2.4 Link between independent variable Team Learning Behavior (TLB) and business planning success

Analysis of a research paper on team learning in the journal of Applied Psychology (Ellis et al. (2003) shows that team learning has the potential to correlate with performance. This is especially the case if the cognitive ability of these team members is higher e.g. their ability to reflect on processes, which is a component of our team learning behaviour scale. This in combination with the findings by e.g. (Savelsbergh. 2009; Edmondson. 1999) in their previous research on team learning suggests there is a relationship between team learning and business planning success.

Business planning success refers to the success of a team/firm in gaining venture capitalist investment. These venture capitalists follow strict criteria and the quality of the business plan being one of the factors assessed. As such the business plan must be enticing and show potential. As is known, teams learn through experience and the more experience a team builds up with drafting business plans the more likely it is that their behaviour and methods will alter and result in improved business plans.

In the view of the above we come to the following hypothesis:

H1: Team learning behavior is positively related to business planning success

2.5 Link between independent variable Team Innovativeness and business planning success

Through team innovativeness, teams are constantly contemplating new and useful ideas, processes, products or procedures. Thus, teams will focus their efforts on innovating new ideas, processes and procedures to make a successful business plan, which a venture capitalist is willing to invest in.

Prior research (Scott et al. (1994) suggests that individuals involve themselves in role making processes with their team members resulting in mutual trust, respect and collaboration among individuals and their work group. Scott et al. propose that the quality of a team member relies on their individual innovative behaviour. Unlike Scott et al. who focused on an individual’s innovativeness, we look at a team’s innovativeness and propose, that based on research of individual member innovativeness that a team can be innovative too.

Many papers have been published on individual innovativeness of employees or team members but not enough research has been done on innovativeness of teams. Based on the published findings regarding the correlation between individual innovativeness and entrepreneurial success we believe that team

innovativeness can have similar influences on business planning success.

In view of the above we come to the following hypothesis:

H2: Team innovativeness is positively related to business planning success

3. METHOD

3.1 Outline, survey and respondents

The analysis uses data that was gathered from students at the University of Twente in the period from February to April 2017.

The initial sample size consisted of 22 groups all with 4 members, leading to an initial sample size of 88 participants. However, after issues with the data, e.g. more than two group members failing to respond to the survey or failing to do both the initial and the second survey led to the rapid decline of participants available for data analysis. In total 9 group had to be removed from the total sample, meaning 36 participants would no longer be available to analyze results from, resulting in 52 respondents.

3.2 Measures

All the questions answered by respondents were based upon their own feelings about agreement/disagreements and can therefore be biased.

The Independent variables: Team innovativeness

The required data was collected by sending out two quantitative surveys on separate occasions and could be analysed due to set scales ranging from 1 to 5 (1 = never, 5 = always). The main categories focused on: Entrepreneurial work, searching for alternative working methods, techniques, instruments and approaches to tasks, introduction of new ideas and convincing people of these ideas. Team innovativeness was measured using the above-mentioned scale of 5 items developed by De Jong and Den Hartog (Jong et al. (2010).

(Survey 1 in appendix)

Team learning behaviour

The data for team learning behaviour was collected the same way data was collected for team innovativeness, through two quantitative surveys sent out to participants but with a 1 to 7 (1 = strongly disagree and 7 = strongly agree) scale. The main categories focused on: team work, information sharing, collectively drawing conclusions from ideas, listening, communicating mistakes for future

prevention and team collaboration effectiveness. Team learning behaviour was measured using the 7-item scale developed by Savelsbergh (Savelsbergh et al. (2009).

(Survey 2 in appendix)

The dependent variable: Business planning success.

The data was collected by having two experienced (>10 years' experience) business consultancy professionals assess group respondent answers to the survey questions and based upon these answers gave their group a rating from 1 to 7 (1 = strongly disagree, 7 =strongly agree) in relation to the potential business planning success their answers seemed to reflect. These opinions however, despite coming from two highly experienced business consultancy individuals are open to bias due to the fact there is no concrete scale of grading for the collected data but instead we relied on the feelings of the judges. The data was averaged for every group assessed by both judge 1 and 2 and later combined to form the business planning success variable.

Control variables.

The control variables consist of gender (1=male, 2=female, 3=other/prefer not to answer), age, nationality, prior entrepreneurial experience and entrepreneurial role model(s).

The Cronbach's alpha coefficient for the team

We decided to go with a cut off at 0.7 as a score below 0.7 may suggest that all the questions within the scale are not measuring the same construct. The score for the team innovativeness variable is 0.956, and 0.881 (table 1) for team learning behaviour. Both team innovativeness and team learning behaviour have acceptable scales. A high value of alpha (.0.90) could mean that the survey should be shortened, so there may be too many questions to collect data for team innovativeness. (Tavakol & Dennick. (2011).

Table 1. Showing the Cronbach's alpha calculations

Item-Total Statistics - Innovative work behaviour						
Item-total statistics; Cronbach's alpha = .956	Mean	S	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Idea exploration	3.2917	0.60442	9.6009	5.432	0.878	0.955
Idea generation	3.1426	0.75730	9.7500	4.708	0.910	0.937
Idea championing	3.1250	0.85565	9.7676	4.347	0.894	0.945
Idea implementation	3.3333	0.81832	9.5593	4.395	0.934	0.930
Item-Total Statistics - Team learning						
Item-total statistics; Cronbach's alpha = .881	Mean	S	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Co-construction of meaning	5.64	0.45	33.5676	9.027	0.330	0.893
Exploring different perspectives	5.68	0.57	33.5269	7.635	0.687	0.861
Error analysis	5.15	0.65	34.0560	7.122	0.748	0.855
Error communication	5.33	0.47	33.8796	7.611	0.876	0.845
Reflection on processes	4.08	0.54	35.1199	7.445	0.814	0.848
Reflection on outcomes	4.69	0.55	34.5139	7.656	0.707	0.859
Feedback seeking behaviour	4.61	0.54	34.5972	8.021	0.597	0.871
Experimenting	4.03	0.52	35.1713	8.525	0.431	0.887

3.3 Analytical strategy

Data was placed in excel, aggregated and displayed under the appropriate variable headings and further aggregated per group leading to a final database of results we could use for analysis. Occasionally in the data set we would come across a participant who had not answered one or two of the total questions in the survey. This resulted in excel displaying this data cell as #DIV! meaning this cell was causing inconsistencies in data, we figured that replacing this troublesome cell with the mean value of the answers they gave for the similar questions was the best possible choice as this led to the least negative impact on final results.

After the grouping and sorting of raw data into a final database, the data was transferred into IBM SPSS Statistics 24, which is a statistical package capable of performing complex data manipulation and analysis. Through SPSS we could perform the necessary statistical tests to evaluate the reliability, strength and potential correlations of the data. Cronbach's alpha was used to measure the reliability of the measurement tools (scales used). The correlation matrix was used to assess appropriate correlation coefficients and their p values between innovative work behaviour, team learning behaviour and business planning success and regression was used to determine a potential significant relationship

between the two independent variables and the dependent variable. These statistical tests led to the formation of total data results and conclusions based upon accepted and rejected hypotheses.

4. ANALYSIS

4.1 Correlation matrix

A correlation matrix is a table simply showing the correlation coefficients between variables. The two items of importance are the Pearson correlation coefficient and the significance (p) value.

Taking a look at the correlation matrix for innovative work behaviour (table 2 in appendix) it can be seen through the pearson correlation (r value) figure which indicates strength and direction of a correlation that team innovativeness (IWB) has a negative relationship with business planning success with a value of -.136. The p value in this case simply outlines whether the r value we received is just by chance. The p value for IWB is .643 which is relatively high and suggests that the r value can be influenced by chance.

Analysing the correlation matrix for team learning behaviour (table 2) looks more promising with a positive r value of .290. The p value again is high at .314.

Control variables (table 2) were incorporated into the correlation matrix to assess the possibility that these may influence the IWB, TLB and in turn BPS. Gender has a visible relationship with innovative work behaviour based on an r value of .511 and a significance level of .062, age also has a relationship with innovative work behaviour with an r value of .517 and Sig value of .058. Role models too seems to influence IWB (.528 with Sig value .052), nationality values are irrelevant due to the incredibly high significance values on all three variables.

4.2 Regression

Regression is a technique used to determine the relationship between two or more variables where in this case a change in business planning success is associated with or relies on the change in one or several independent variables.

First, we will look at the data output (Table section 3) for innovative work behaviour. As there are multiple variables in the overall independent variable the adjusted R² value will be used. R² measures the proportion of variation in dependent variable explained by the independent variables. The adjusted R² differs as it only increases if the new component improves the model.

The adjusted R² value is -.063 which can be interpreted in percentage terms as meaning -6.3% total variability in business planning success is explained or caused by innovative work behaviour. The R² is negative as the chosen model (IWB) does not follow the trend of the data. Although this does not often occur it can happen if the data does not fit with the model.

Table section 3

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.136 ^a	.019	-.063	1.69282

a. Predictors: (Constant), IWB_Aggregated

The Anova table (Table section 3) further outlines whether the independent variables have an impact on business planning success through the p value which is labelled as "Sig." If the p value is below 0.05 we reject the Nul hypothesis.

Table section 3

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.648	1	.648	.226	.643 ^b
	Residual	34.388	12	2.866		
	Total	35.036	13			

a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), IWB_Aggregated

In this instance, there is a p value of .643 which means there is strong evidence to *accept the Nul hypothesis: Team innovativeness does not relate to business planning success.*

The regression graph (Graph 1) for IWB shows a negative correlation and has two outliers.

The adjusted R² value for the team learning behaviour data output (Table section 4) is a slightly more promising .008 which can be interpreted in percentage terms as meaning 0.08% of the business planning success variability can be explained or caused by team learning behaviour.

Table section 4

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.290 ^a	.084	.008	1.63519

a. Predictors: (Constant), TLB_Aggregated

The Anova table (Table section 4) shows the p value to be 0.314 which is above 0.05 meaning there is strong evidence to *accept the Null hypothesis: Team learning behavior does not relate to business planning success.*

Table section 4

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.950	1	2.950	1.103	.314 ^b
	Residual	32.086	12	2.674		
	Total	35.036	13			

a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), TLB_Aggregated

The regression graph (Graph 2) for team learning behaviour has a weak positive correlation and also has two outliers.

Thus, H1 and H2 have to be rejected.

4.3 Post hoc analysis

After analysis of the influence both team innovativeness (IWB) and team learning behaviour have on business planning success, it was obvious the results were inconclusive as we had no results to support that either of these variables influence business planning success, and we decided to analyse the variables which compose both these independent variables individually to extract further data on the possibility one or more variables/groups may be skewing the data.

4.4 Correlation matrix

Looking at the correlation matrix for innovative work behaviour (table 5) it can be seen through the Pearson correlation coefficient (r value) that all of the four IWB variables, idea exploration (-.008), idea championing

(-.074), Idea generation (-.228) and idea implementation (-.178) have a negative correlation with business planning success.

The p values for all four variables are relatively high, meaning that all relations are insignificant. This is especially the case for idea exploration having a p value of .978 and idea championing have a p value of .801.

Analysing the correlation matrix for team learning behaviour (table 6) looks more promising with seven of the eight variables having a positive r value. Most notably so Error analysis (.154), error communication (.285), reflection on processes (.401) and reflection on outcomes (.638). The highest r value of .638 (reflection on outcomes) variable also has a very low p value of .014 which suggests that reflection on outcomes influences business planning success and the r value is relevant and was not found by chance.

4.5 Regression

For innovative work behaviour, the adjusted R^2 value is negative .016 (table section 7) which can be interpreted in percentage terms as meaning -1.6% total variability in business planning success is explained or caused by innovative work behaviour.

Table section 7

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.545 ^a	.297	-.016	1.65484

a. Predictors: (Constant), dataset_IWB_IdeaImplementation, dataset_IWB_IdeaExploration, dataset_IWB_IdeaChampioning, dataset_IWB_IdeaGeneration

The Anova table (table section 7) shows the p value ("Sig") to be .479, which just as the aggregated innovative work behaviour results means there is strong evidence to accept the Null hypothesis: Team innovativeness does not relate to business planning success.

Looking at the individual IWB variables under the unstandardized coefficients column in the coefficients table (table section 7) idea generation and idea implementation are the two variables leading to a decrease in the judges mean scores (business planning success). Idea generation leads to a decrease of 2.797 and idea implementation leads to a decrease of .362 while keeping all other variables constant.

The adjusted R^2 value for the team learning behaviour data output (table section 8) is a more promising .605 which can be interpreted in percentage terms as meaning 60.5% of the business planning success variability can be explained or caused by team learning behaviour.

Table section 8

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921 ^a	.848	.605	1.03184

a. Predictors: (Constant), dataset_TLB_E, dataset_TLB_CCoM, dataset_TLB_RoO, dataset_TLB_FS, dataset_TLB_EDP, dataset_TLB_EA, dataset_TLB_RoP, dataset_TLB_EC

The Anova table (table section 8) shows the P value to be 0.092 which is above 0.05 this, like the aggregated team learning behaviour results means there is strong evidence to accept the following Nul hypothesis: Team learning behavior does not relate to business planning success.

Reflection on outcomes and exploring different perspectives are the only variables with a significance level that shows significant impact on business planning success. Reflection on outcomes has a positive impact on business planning success with an increase of 2.358 of the judges scores and exploring different perspectives has a negative impact on the judges scores with a decrease of 2.643 keeping all other variables constant.

5. Discussion

The aim of this research was to find whether team learning behaviour and team innovativeness had an influence on business planning success. We decided to focus on these variables as prior research was conducted but usually not on team level aspects and instead mostly focused on individuals. The prior research results and conclusions always varied from innovativeness or learning behaviour having a highly positive effect, a negative effect to no effect at all on performance or business planning success. This study further extends existing research such as (Jong et al. (2010)'s paper on innovative work behaviour and (Edmondson. (1999)'s paper on team learning by focusing on team level variables as opposed to individual innovation or individual learning to assess whether these team level variables have an impact on business planning success.

This research complements prior papers such as (Lounamaa & March, 1987; March, 1991; Levinthal & March, 1993; Bunderson & Sutcliffe. 2003) to the extent that their findings that team learning has no relation to performance/business planning success is confirmed in this paper. (Jong et al. (2010) found that innovative work behaviours of individuals are crucial to continuous improvement of business performance. Although this paper focused on team level innovativeness it was expected that similar conclusions could be drawn when compared to individual innovativeness however we were not able to confirm this.

The following hypotheses were formed on the basis of the literature review: H1: Team learning behavior is positively related to business planning success. H2: Team innovativeness is positively related to business planning success. Multiple statistical tests were used and reported

such as regression analysis on both team learning behaviour and team innovativeness. Through these tests an Anova table was formed and based on the significance levels shown (.643 team innovativeness, .314 team learning behaviour) it was conclusive that the hypotheses would have to be rejected as the significance levels were far too high, the cutoff point being 0.05. After these initially disappointing outcomes we decided to focus on the individual components making up our independent variables and discovered similar results. Most variables still had no relation to business planning success. Of the four components making up innovative work behaviour only two were positively correlated with business planning success (idea exploration and idea championing) but the significance level was too high for these to be taken into serious consideration. However, a couple of variable components of team learning behaviour were significant. Reflection on outcomes and exploring different perspectives were both significant and showed significant relation between them and business planning success. Reflection on outcomes has a positive influence on business planning success with an increase of 2.358 of the judges scores and exploring different perspectives has a negative impact on the judges scores with a decrease of 2.643 keeping all other variables constant and as such this is not a significant variable for our research paper. These results suggest that reflection on the outcomes, thus reflection on their own business plans e.g. identifying positive and negative parts, mistakes made etc. could help improve their business plans in the future. Thus, an increase of reflection on outcomes seems to lead to an increase in business planning success.

This research offered analysis into the influence of both independent variables i.e. innovative work behaviour and team learning behaviour on the dependent variable i.e. business planning success. Although multiple studies have been carried out on all three individual variables mentioned there has been no insight into the effect of these variables on one another. This study is the first to focus on team level aspects regarding business planning success for both the independent variables. However, we have not managed to confirm that team learning influences business planning success. This contradicts our earlier statement under section 2.4 where we assumed that team learning has the potential to influence business planning success. Furthermore, we have also not managed to confirm that team innovativeness has influence on business planning success, which is contrary to what we assumed under section 2.5.

Limitations

As this research paper was based on empirical data there are numerous limitations to be mentioned. The data was collected from students at the University of Twente. The initial sample size was 88 students which in turn meant 22 groups were available for analysis. After checking the data responses, it was clear that quite a few of the individuals (thus groups) did not take this task very seriously (based on answers given) and/or skipped either questions or entire

surveys which removed 9 groups from the research. This resulted in 13 groups and thus 52 people left for analysis. This research was also conducted in a European country (Netherlands) which potentially restricts this research paper being valuable elsewhere around the world. Questions were formed and placed in a survey and these questions supposedly made up an independent variable. It could be that the questions placed in the survey did not provide an accurate representation of one or both independent variables. The dependent variable (business planning success) was formed by having two independent judges score the teams responses from 1 to 7. Both judges had more than 10 years of experience related to business planning success but this does not exempt them from potentially being biased, which may have impacted their assessment as a result of which they may have improperly scored the group's results.

Future research

For a better future understanding of team learning behaviour and team innovativeness researchers should possibly focus on an alternate dependent variable such as company performance as an add on to prior research papers as business planning success may be too much of a restricted topic to analyse. This paper had limited data to work with and we believe future researchers may have more success with this topic in case they have access to more elaborate data which may lead to different conclusions. In addition, we suggest that this research be carried out by individuals or a team with appropriate funding and time. Among our results we found one positively significant variable named reflection on outcomes and we believe this too may warrant future research.

Practical implications

If we focus on the effect the findings of this research paper could have on potential and actual entrepreneurs and their supporting staff as well as policy makers. It should be noted that they may be better off refraining from investing too much time in team learning or team innovativeness as a focus for business planning success. Firms/management may want to find alternative ways of improving business planning success.

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APPENDIX

Table 1:

Item-Total Statistics - Innovative work behaviour						
Item-total statistics; Cronbach's alpha = .956	Mean	S	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Idea exploration	3.2917	0.60442	9.6009	5.432	0.878	0.955
Idea generation	3.1426	0.75730	9.7500	4.708	0.910	0.937
Idea championing	3.1250	0.85565	9.7676	4.347	0.894	0.945
Idea implementation	3.3333	0.81832	9.5593	4.395	0.934	0.930
Item-Total Statistics - Team learning						
Item-total statistics; Cronbach's alpha = .881	Mean	S	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Co-construction of meaning	5.64	0.45	33.5676	9.027	0.330	0.893
Exploring different perspectives	5.68	0.57	33.5269	7.635	0.687	0.861
Error analysis	5.15	0.65	34.0560	7.122	0.748	0.855
Error communication	5.33	0.47	33.8796	7.611	0.876	0.845
Reflection on processes	4.08	0.54	35.1199	7.445	0.814	0.848
Reflection on outcomes	4.69	0.55	34.5139	7.656	0.707	0.859
Feedback seeking behaviour	4.61	0.54	34.5972	8.021	0.597	0.871
Experimenting	4.03	0.52	35.1713	8.525	0.431	0.887

Table 2:

Correlations									
		TLB Aggregated	IWB Aggregated	Gender average	Age average	Prior experience average	Rolemodel average	Nationality	Business planning success
TLB Aggregated	Pearson Correlation	1	.581*	.264	.411	.050	.261	-.032	.290
	Sig. (2-tailed)		.029	.363	.144	.865	.368	.914	.314
	N	14	14	14	14	14	14	14	14
IWB Aggregated	Pearson Correlation	.581*	1	.511	.517	-.096	.528	-.127	-.136
	Sig. (2-tailed)	.029		.062	.058	.745	.052	.665	.643
	N	14	14	14	14	14	14	14	14
Gender average	Pearson Correlation	.264	.511	1	.412	.373	-.042	-.329	.019
	Sig. (2-tailed)	.363	.062		.143	.189	.886	.250	.949
	N	14	14	14	14	14	14	14	14
Age average	Pearson Correlation	.411	.517	.412	1	-.390	.252	-.030	-.040
	Sig. (2-tailed)	.144	.058	.143		.168	.386	.918	.891
	N	14	14	14	14	14	14	14	14
Prior experience average	Pearson Correlation	.050	-.096	.373	-.390	1	-.365	.006	-.149
	Sig. (2-tailed)	.865	.745	.189	.168		.199	.983	.611
	N	14	14	14	14	14	14	14	14
Rolemodel average	Pearson Correlation	.261	.528	-.042	.252	-.365	1	-.056	.019
	Sig. (2-tailed)	.368	.052	.886	.386	.199		.848	.950
	N	14	14	14	14	14	14	14	14
Nationality	Pearson Correlation	-.032	-.127	-.329	-.030	.006	-.056	1	-.116
	Sig. (2-tailed)	.914	.665	.250	.918	.983	.848		.694
	N	14	14	14	14	14	14	14	14
Business planning success	Pearson Correlation	.290	-.136	.019	-.040	-.149	.019	-.116	1
	Sig. (2-tailed)	.314	.643	.949	.891	.611	.950	.694	
	N	14	14	14	14	14	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

Table section 3 (IWB):

Model Summary					ANOVA ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Sum of Squares	df	Mean Square	F	Sig.
1	.136 ^a	.019	-.063	1.69282	1	Regression	.648	1	.648	.226
						Residual	34.388	12	2.866	.643 ^b
						Total	35.036	13		

a. Predictors: (Constant), IWB_Aggregated

a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), IWB_Aggregated

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	9.157	2.121		.001
	IWB_Aggregated	-.311	.653	-.136	.643

a. Dependent Variable: Business_planning_success

Table section 4 (TLB):

Model Summary					ANOVA ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Sum of Squares	df	Mean Square	F	Sig.
1	.290 ^a	.084	.008	1.63519	1	Regression	2.950	1	2.950	1.103
						Residual	32.086	12	2.674	.314 ^b
						Total	35.036	13		

a. Predictors: (Constant), TLB_Aggregated

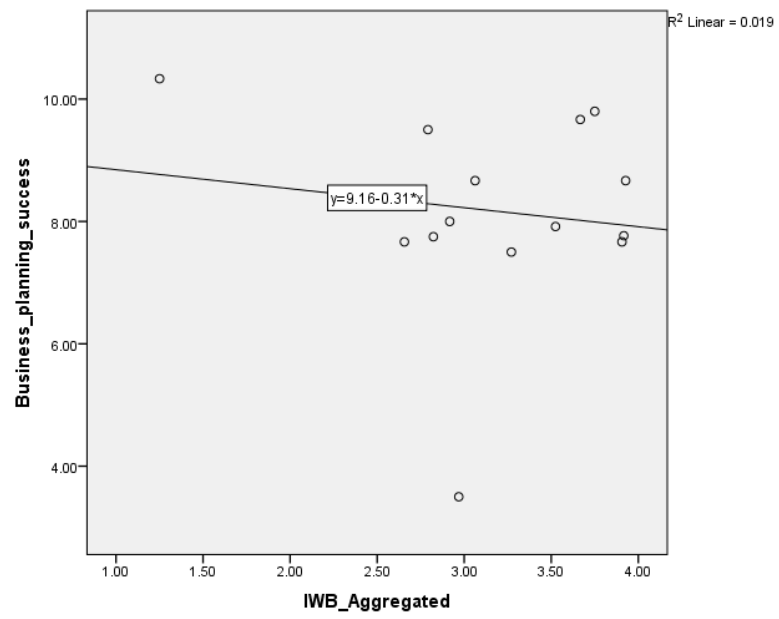
a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), TLB_Aggregated

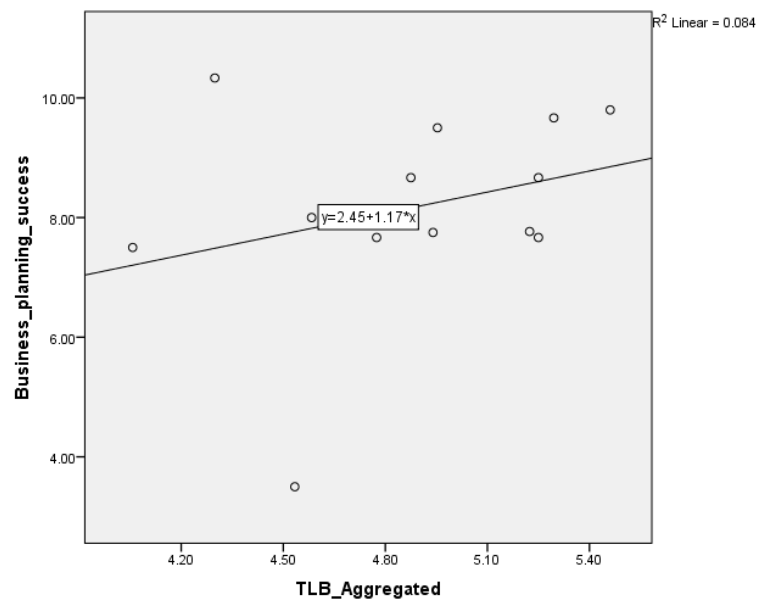
Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.446	5.469		.663
	TLB_Aggregated	1.173	1.116	.290	.314

a. Dependent Variable: Business_planning_success

Graph 1:



Graph 2:



POST-HOC ANALYSIS

Table 5:

		Correlations				
		Idea exploration	Idea generation	idea championing	Idea implementation	Business planning success
Idea exploration	Pearson Correlation	1	.903**	.797**	.817**	-.008
	Sig. (2-tailed)		.000	.001	.000	.978
	N	14	14	14	14	14
Idea generation	Pearson Correlation	.903**	1	.850**	.903**	-.228
	Sig. (2-tailed)	.000		.000	.000	.434
	N	14	14	14	14	14
Idea championing	Pearson Correlation	.797**	.850**	1	.913**	-.074
	Sig. (2-tailed)	.001	.000		.000	.801
	N	14	14	14	14	14
Idea implementation	Pearson Correlation	.817**	.903**	.913**	1	-.178
	Sig. (2-tailed)	.000	.000	.000		.543
	N	14	14	14	14	14
Business planning success	Pearson Correlation	-.008	-.228	-.074	-.178	1
	Sig. (2-tailed)	.978	.434	.801	.543	
	N	14	14	14	14	14

** Correlation is significant at the 0.01 level (2-tailed).

Table 6

		Correlations								
		Co- construction of meaning	Exploring different perspectives	Error analysis	Error communicati on	Reflection on processes	Reflection on outcomes	Feedback seeking behaviour	Experimentin g	Business planning success
Co-construction of meaning	Pearson Correlation	1	.437	.107	.478	.472	.225	.082	-.077	.023
	Sig. (2-tailed)		.118	.715	.084	.089	.440	.779	.794	.937
	N	14	14	14	14	14	14	14	14	14
Exploring different perspectives	Pearson Correlation	.437	1	.557*	.736**	.735**	.604*	.430	.231	-.031
	Sig. (2-tailed)	.118		.038	.003	.003	.022	.125	.426	.917
	N	14	14	14	14	14	14	14	14	14
Error analysis	Pearson Correlation	.107	.557*	1	.848**	.564*	.541*	.630*	.561*	.154
	Sig. (2-tailed)	.715	.038		.000	.036	.046	.016	.037	.599
	N	14	14	14	14	14	14	14	14	14
Error communication	Pearson Correlation	.478	.736**	.848**	1	.743**	.650*	.534*	.384	.285
	Sig. (2-tailed)	.084	.003	.000		.002	.012	.049	.175	.323
	N	14	14	14	14	14	14	14	14	14
Reflection on processes	Pearson Correlation	.472	.735**	.564*	.743**	1	.720**	.530	.368	.401
	Sig. (2-tailed)	.089	.003	.036	.002		.004	.051	.195	.155
	N	14	14	14	14	14	14	14	14	14
Reflection on outcomes	Pearson Correlation	.225	.604*	.541*	.650*	.720**	1	.483	.379	.638*
	Sig. (2-tailed)	.440	.022	.046	.012	.004		.080	.181	.014
	N	14	14	14	14	14	14	14	14	14
Feedback seeking behaviour	Pearson Correlation	.082	.430	.630*	.534*	.530	.483	1	.522	.101
	Sig. (2-tailed)	.779	.125	.016	.049	.051	.080		.056	.732
	N	14	14	14	14	14	14	14	14	14
Experimenting	Pearson Correlation	-.077	.231	.561*	.384	.368	.379	.522	1	.158
	Sig. (2-tailed)	.794	.426	.037	.175	.195	.181	.056		.589
	N	14	14	14	14	14	14	14	14	14
Business planning success	Pearson Correlation	.023	-.031	.154	.285	.401	.638*	.101	.158	1
	Sig. (2-tailed)	.937	.917	.599	.323	.155	.014	.732	.589	
	N	14	14	14	14	14	14	14	14	14

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table section 7(IWB):

Model Summary					ANOVA ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Sum of Squares	df	Mean Square	F	Sig.
1	.545 ^a	.297	-.016	1.65484	1	Regression	10.389	4	2.597	.948
						Residual	24.646	9	2.738	.479 ^b
						Total	35.036	13		

a. Predictors: (Constant), dataset_IWB_IdeaImplementation, dataset_IWB_IdeaExploration, dataset_IWB_IdeaChampioning, dataset_IWB_IdeaGeneration

a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), dataset_IWB_IdeaImplementation, dataset_IWB_IdeaExploration, dataset_IWB_IdeaChampioning, dataset_IWB_IdeaGeneration

Coefficients ^a					
IWB		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	6.503	2.784		.044
	Idea exploration	2.794	1.830	1.010	.161
	Idea generation	-2.797	1.843	-1.332	.163
	Idea championing	.834	1.394	.420	.564
	Idea implementation	-.362	1.699	-.183	.836

a. Dependent Variable: Business_planning_success

Table section 8(TLB):

Model Summary					ANOVA ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Sum of Squares	df	Mean Square	F	Sig.
1	.921 ^a	.848	.605	1.03184	1	Regression	29.712	8	3.714	.092 ^b
						Residual	5.324	5	1.065	
						Total	35.036	13		

a. Predictors: (Constant), dataset_TLB_E, dataset_TLB_CCoM, dataset_TLB_RoO, dataset_TLB_FS, dataset_TLB_EDP, dataset_TLB_EA, dataset_TLB_RoP, dataset_TLB_EC

a. Dependent Variable: Business_planning_success

b. Predictors: (Constant), dataset_TLB_E, dataset_TLB_CCoM, dataset_TLB_RoO, dataset_TLB_FS, dataset_TLB_EDP, dataset_TLB_EA, dataset_TLB_RoP, dataset_TLB_EC

Coefficients ^a					
TLB		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	7.282	4.896		.197
	Co-construction of meaning	-1.084	.991	-.296	.324
	Exploring different perspectives	-2.643	.803	-.949	.022
	Error analysis	-1.502	1.275	-.588	.292
	Error communication	3.001	2.021	.876	.198
	Reflection on processes	1.347	1.021	.447	.244
	Reflection on outcomes	2.358	.808	.799	.033
	Feedback seeking behaviour	-.507	.724	-.171	.515
	Experimenting	-.087	.697	-.029	.905

a. Dependent Variable: Business_planning_success

Innovative work behaviour survey (survey 1)

Q7 People have different preferences when it comes to work, both with regard to developing opportunities and work more generally. Please indicate the importance you ascribe to the following statements:

[illegible]

Team learning behaviour survey (survey 2)

Q19 Teams work together and learn together in different ways. Think about the team you are working with in this module (Innovation & Entrepreneurship). Please indicate the extent to which you agree that following statements are applicable to your team.

[illegible]