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Does Extrinsic Motivation Affect Creativity Within Diverse Teams?

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DOES EXTRINSIC MOTIVATION AFFECT CREATIVITY WITHIN DIVERSE TEAMS?

by
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ABSTRACT

GITANJALI KASI VISWANATHAN: The Effect of Extrinsic Motivation on Creativity within Diverse Teams (Under the direction of Dwight Frink)

This study analyzes the relationship between extrinsic motivation and creativity in teams. The moderation effect of functionality, openness to experience, agreeableness, conscientiousness, and diversity within a team is also considered. A survey was constructed and distributed to students within Sections 1 and 6 of the course Principles of Management at The University of Mississippi. Survey data were collected from 77 respondents and used for hierarchical regression and moderation analysis. The results of this study do not support extrinsic motivation as a significant predictor of creativity. Functionality, agreeableness, and conscientiousness each demonstrate a separate, significant interaction effect with extrinsic motivation. However, neither openness to experience nor diversity demonstrates a significant moderation effect on the relationship between extrinsic motivation and creativity.

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Chapter 1

INTRODUCTION

Dynamic and efficient team compositions are essential for the prosperity of some organizations. Certain characteristics need to be satisfied for individuals to be successful in their roles as team members. With industries moving from static non-intellectual work towards more complex and mentally challenging jobs, the necessity of characteristics such as creativity are increasing in demand. Therefore, it is important to examine what factors and which variables relate to creativity within work-teams in organizations. Much existing literature suggests one of these variables to be the diversity composition of the team itself. A governing variable also well covered in previous research, is motivation. Intrinsic motivation is often said to directly increase creativity (Deci & Ryan 2000; Koestner et al. 1984; Cerasoli et al., 2014; Leung et al., 2014). While extrinsic motivation has not been consistently found to be an immediate influencer of creativity, studies such as Amabile (1996) and Kasof et al. (2007) argue that external rewards can generate intrinsic motivation, indirectly improving levels of creativity.

Thus, there is a lack of consensus regarding the relationship between extrinsic motivation and creativity. Even less research exists on the relationship between these variables within and across teams. Consequently, it is interesting to examine this relationship further. For this study to be possible, different compositions of teams within a coursework environment will be questioned and subject to analysis.

Therefore, the purpose of this study is to investigate the relationship between extrinsic motivation and creativity within diverse teams. A survey was made available to students

involved in two sections of the course Principles of Management at the University of Mississippi. Respondents were questioned on their experiences and thoughts as members of the teams they were assigned to within the course. The survey is made up of items covering different metrics of team creativity, team functionality, individual motivation, and personality variables. Items assessing diversity, such as personality measures and demographic self-reports were also included to allow for analysis of different team compositions. Data from the survey was analyzed through agreement testing and moderated hierarchical regression to determine the relationship between extrinsic motivation and creativity within the teams. Further analysis tested the separate moderation effect of functionality, diversity, and the personality variables in interaction with extrinsic motivation on levels of creativity.

The results of the study show a significant positive correlation between creativity and extrinsic motivation; however, no significant relationship can be identified in the regression model. A significant moderation effect can be identified for functionality, agreeableness, and conscientiousness, but not for diversity and openness to experience. High levels of functionality in interaction with high levels of extrinsic motivation decreases creativity. Low levels of conscientiousness and agreeableness in separate interaction with high levels of extrinsic motivation increases creativity.

Chapter 2

THEORY

Creativity

The definitions of creativity vary to some extent; however, one common trend in contemporary literature is that creativity involves bringing something into being which can qualify as both original and valuable (Ochse, 1990). In a business context, creative ideas are considered original if they are distinctive from other ideas currently or previously put in place by the organization. In addition, creative ideas are deemed valuable if they provide direct or indirect benefit to the organization, either in the short or long term. Thus, in accordance with pre-existing theory and research, the present study defines creativity as the development of novel and useful ideas, by employees, regarding the products, practices, services, or procedures used in the workplace (Amabile, 1996; Zhou & Shalley, 2003).

Woodman and other scholars (1993) developed an interactive model of creativity distinguishing its antecedents at three different levels: individual, group, and organizational. Woodman and colleagues denote antecedents of individual creativity as being personality, cognitive style, intrinsic motivation and domain knowledge; group creativity as group cohesiveness, group composition, and group structure; and organizational creativity as organizational culture, policies, leadership and resource allocation capacity.

A study by IBM (2010) reveals that tackling swift changes and uncertainty is common for managers. Thus, for both managers and their subordinates, creative thinking is a key skill. The model developed by Woodman and his colleagues (1993) highlights the importance of creativity

by illustrating how its existence at the individual level can grow to innovation at the organizational level. Therefore, in order to achieve long-term organizational success, supporting creativity in the workplace is a prerequisite (DiLileo & Houghton, 2006).

Teams

As individuals' knowledge base becomes more specialized, the value of team collaboration in an organizational environment has become growingly essential (Jones, 2008). Research conducted by Devine and colleagues (1999) indicate that within a random sample of U. S. organizations, about half used some form of teamwork. The responsibilities most frequently performed by these teams proved to require significant creativity (Devine et al., 1999). There is a general notion that the creative synergy found within teams promotes the generation of ideas that could not have been formed individually (Baer et al., 2008)

In organizational psychology, the terms "team" and "group" have been used interchangeably in the past (Guzzo & Dickson, 1996). However, Katzenbach & Smith (1993) emphasize that teams are only formed when people within a group have developed synergy and a shared sense of commitment. In the context of work, teams can be defined as two or more persons who view themselves and are viewed by others as a social entity, who are symbiotic because of the assignments they partake in as members of a group, who are embedded in at least one larger social structure (e.g. community, organization), and who perform functions that affect others (such as customers or coworkers) (Guzzo & Dickson, 1996).

This definition is one that accommodates many different methods of team formation that include but are not limited to autonomous work groups, project teams, and cross-functional teams. Regardless of how groups or teams may be formed, they all engage in team processes. Team processes are the ways in which members operate interdependently using resources such

as time, expertise, equipment, and money to yield meaningful outcomes (Marks et al., 2001). Oftentimes the quality of these processes can be used to predict team effectiveness (Marks et al., 2001).

A functioning team is measured by the results of their goals they strive to achieve (Lencioni, 2005). Unfortunately, every team faces the potential for dysfunction (Lencioni, 2006). The first step to improving team function is by addressing the five dysfunctions of a team: absence of trust, fear of conflict, lack of commitment, avoidance of accountability, and inattention to results (Lencioni, 2006). First and foremost, Lencioni (2005) emphasizes that vulnerability and openness should be the norm for teams. High trust can help eliminate the fear of conflict for members within a team, encouraging unfiltered discussion on essential matters (Lencioni, 2005). If the fear of conflict can be decreased, team members will be able to better commit to clear decisions without any ambiguity (Lencioni, 2005). Teams that can commit to clear goals can better hold each other accountable for their responsibilities. Therefore, effectively leveraging trust, conflict management, commitment and accountability can lead to better team results, for team members will find it easier to give importance to collective success rather than personal triumph (Lencioni, 2005).

Research has identified team-based work structures as a likely means of facilitating employee creativity (Osborn, 1957). Particularly many studies have suggested that collaboration in diverse teams may enhance the production of new ideas and help to eliminate groupthink (Amabile, 1994; De Dreu & West, 2001; Watson et al., 1993).

Previous studies have suggested the possibility to understand team motivation by generalizing individual-level motivation constructs and theories to the team level (Bandura, 1997; Kirkman & Rosen, 1999). Derived from individual intrinsic motivation, team intrinsic

motivation is promoted via ongoing interaction, coordination, and collaboration among individuals within the same team (Morgeson & Hofmann, 1999). Morgeson and Hofmann (1999) further contend that team intrinsic motivation is functionally equivalent to individual intrinsic motivation. For example, individual intrinsic motivation bears a positive effect on individual creativity; consequently, team intrinsic motivation bears a positive effect on team creativity.

In terms of extrinsic motivation, empirical analyses have produced mixed results. Some scholars assert that when faced with higher rewards, employees exhibit more efficient and goal-oriented conduct (Amabile, 1993; Cerasoli et al., 2014). However, others argue that when it comes to knowledge exchange, extrinsic motivation may be counterproductive, for an emphasis on external rewards can dissuade employees from engaging in collective behavior (Auh & Menguc, 2013; Osterloh & Frey, 2000).

Motivation

Extrinsic motivation can be defined as the motive to do something due to a separable outcome, such as via pressure or acquired rewards (Ryan & Deci, 2000). Individuals are unlikely to participate in activities which are not experienced as thought-provoking, optimally challenging, or aesthetically favorable, one example being work. Thus, to some extent, employees will require an external reason to perform (Deci & Ryan, 2002). Intrinsic Motivation, on the other hand, is a drive caused by no apparent reward other than pure interest (Deci, 1975).

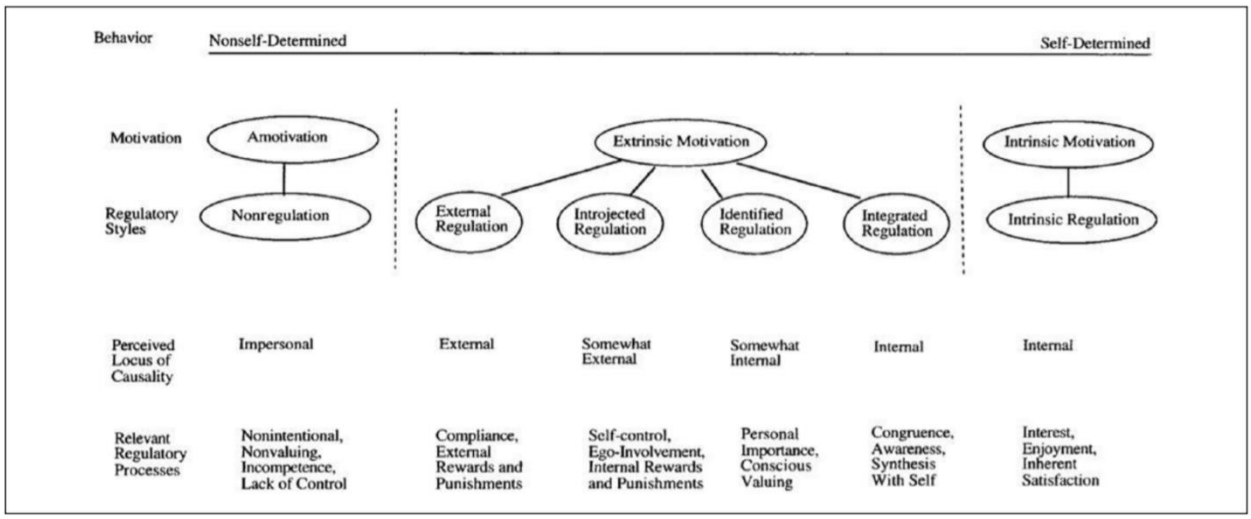
Previous studies suggest that intrinsic motivation is related to increased creativity (Deci and Ryan 2000; Koestner et al. 1984). Because intrinsic motivation influences the choice to do a particular task, the exertion spent towards having success with the task, and diligence at the task even after achieving initial success, it directly affects creativity (Cerasoli et al., 2014, Leung et al., 2014). In addition to being more curious and cognitively flexible, intrinsically motivated

employees experience higher levels of positive work attitude. (Amabile, 1996; Isen, 2000). Scholars have found the previously mentioned factors to be advantageous to creativity (Amabile, 1996; Isen, 2000).

However, organizations cannot expect their employees to always be intrinsically motivated, for many people do not find their jobs interesting enough to work without incentives (Deci et al., 2017). Zhou and her colleagues (2011) argue that rewards, such as salary increases, security benefits and bonuses, tend to positively correlate and affect innovative behavior amongst employees. Gupta (2014) conducted a study showing a clear relationship between motivation, both intrinsic and extrinsic, and creative employee behavior. Gupta (2014) found extrinsic motivation, as a single factor, to negatively relate to creative performance within the study's target group. However, Gupta (2014) also discovered that highly integrated kinds of extrinsic motivation could promote creativity within the workplace. Amabile (1996) proposes that external factors greatly influence employee creativity through their impact on individuals' intrinsic motivation. Thus, although extrinsic motivation can affect creativity its effects are less direct.

Self-Determination Theory focuses on the structure of motivation, or the cause of behavior (Ryan & Deci, 2000). Subsequently, the theory separates the notion of partaking in an activity for inherent satisfaction, otherwise known as intrinsic motivation, from extrinsic motivation on a continuum (See Figure 1).

Figure 1. Self Determination Continuum



Source: Deci, Edward L., and Richard M. Ryan. "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being." *American Psychologist*, vol. 55, no. 1, 2000, pp. 68-78., doi: 10.1037/0003-066X.55.1.68.

As Tremblay and others define the continuum, at the low-end, separate from extrinsic and intrinsic motivation, rests amotivation (2009). Amotivation is when individuals lack motivation, and therefore, act passively (Deci & Ryan, 2000). Following amotivation are the four extrinsic motivational factors, external regulation being the first (Deci & Ryan, 2000). External regulation can be categorized as performing only with the intention of obtaining a reward or escaping a punishment (Deci & Ryan, 2000). Introjected regulation is the management of behavior in order to avoid guilt or feel worthy (Deci & Ryan, 2000). Identified regulation can be defined by doing an activity as a result of personal importance, and acknowledging the action as one's own (Deci & Ryan, 2000). Finally, the most internalized and autonomous form of extrinsic motivation, integrated regulation, refers to when an individual views the significance of an activity with their identity (Deci & Ryan, 2000). At the end of the continuum lies intrinsic motivation (Deci & Ryan, 2000).

The self-determination theory centers on the self-regulatory processes that lie beneath forms of motivation. When people find their work gratifying, intriguing, or meaningful, they experience autonomous motivation (Deci & Ryan 2000; Ryan & Deci 2000a; Sheldon et al. 2003). Consequently, research reveals that autonomous motivation is related to higher levels of creativity (Deci & Ryan 2000; Koestner et al. 1984). Extrinsic motivation arising from external regulation, can cause people to believe their behavior lies outside of themselves (Deci and Ryan 2000; Sheldon et al. 2003). As a result, they may feel coerced or constrained hampering their ability to be creative (Deci & Ryan 2000; Sheldon et al. 2003).

Although rewards based on performance cultivate extrinsic motivation, as noted earlier, research on how extrinsic motivation affects creativity yields mixed results (Shalley et al., 2004). One primary uncertainty about the effects of extrinsic motivation on creativity is the type of contingency between the rewards and creativity (Cerasoli et al., 2014). According to the self-determination theory, if external rewards are only achievable by performing a certain behavior, extrinsic motivation increases as intrinsic motivation declines (Gagné & Deci, 2005). While this effect can improve behavior on more quantitative or straight-forward assignments, it hinders performance on creative tasks (Gagné & Deci, 2005). However, Amabile (1993) argues that extrinsic motivational factors can work in synergy with intrinsic motivation. For example, extrinsic motivators that reinforce competence, such as recognition, usually enhance rather than take away from intrinsic motivation and better performance (Amabile, 1993). Eisenberger and Shanock (2003) propose that these external rewards can fulfill needs for autonomy and competency if the reward is made directly dependent on creativity, or other specific types of performance. If employees are aware of the reward's contingency, extrinsic motivation can positively affect creative performance (Eisenberger & Shanock, 2003).

According to several previous studies, co-workers' and team-members' support enhances individual employee creativity (Chiaburu & Harrison 2008; Madjar et al., 2002; Zhou, 2003). Zhou and George (2001) found that supportive coworkers helped dedicated colleagues turn their own disappointment into fresh ideas and elevated creativity. It has also been found that creative employees improve creativity among their team-members by setting examples to observe and learn from. (Shalley & Perry-Smith 2001; Zhou 2003). Whether it is via encouragement or by setting an example, team-members can help foster other individuals' creativity through external regulation (Hon, 2011). Zhu and others (2016) found that competitive team environments facilitate extrinsic motivation as well. Zhu and colleagues (2016) also discovered that while the extrinsic motivation found in a competitive team-environment did not improve creativity for all participants, it did grow creativity for team members with low intrinsic motivation.

Individual Differences

Many examples of previous research have focused on determining a set of personal characteristics associated with creative achievement (Barron & Harrington, 1981; Davis, 1989; Martindale, 1989). The Big Five personality traits, otherwise known as the five-factor model, is a taxonomy for attributes of personality (Rothmann, 2003). The five-factor model theory uses descriptors of common language to indicate five broad dimensions frequently used to illustrate human personality: conscientiousness, agreeableness, openness to experience, extraversion and neuroticism (Costa & McCrae, 1992).

Diversity is defined as differences in any aspect between individuals that may lead to the awareness of someone else being different from self (Van Knippenberg et al., 2004). Researchers commonly use two dimensions to distinguish between separate types of diversity: observable and non-observable (Milliken & Martins, 1996). Observable diversity mainly refers to the category

of demographic diversity (Jehn et al., 1999). Demographic diversity is the degree to which a team is heterogeneous with respect to fixed characteristics such as age, gender, and ethnicity (Pelled et al., 1999). On the other hand, non-observable diversity refers to cognitive diversity, or differences in knowledge, skills, or perspectives among team members ((Kilduff et al., 2000; Bar et al., 2007).

Personality Variables

Meaningful empirical ties exist between the Big Five personality traits (openness to experience, extraversion, agreeableness, conscientiousness, and emotional stability) and individual creativity (Sung & Choi, 2009).

Openness to Experience

In terms of identifying creativity, data suggests that creativity is related to openness to experience (Sung & Choi, 2009; McCrae, 1987). Usually defined as broad minded, curious, imaginative, original, and untraditional individuals (Costa & McCrae, 1992; McCrae, 1987), those who demonstrate openness to experience are characterized by a need to peruse unfamiliar situations and an absorptive system of consciousness. This demeanor allows for greater access to new perspectives and information (McCrae & Costa, 1997). Empirical evidence, using the NEO-Personality Inventory and measures of divergent thinking, indicated that all relevant aspects of openness to experience were significantly positively correlated with measures of creative performance and divergent thinking (McCrae, 1987).

McCrae has categorized openness and creativity by keying on the facets each may contribute to creative activity (1987). Indicating that divergent thinking may imply aptitude for creativity, McCrae also suggests that openness to experience is a stimulant for creative

expression and exploration. This theory indicates that in order to anticipate creative productivity, creative ability and openness to experience must interact.

Agreeableness

Certain studies have found that agreeableness shares a negative correlation with creative achievement (King et al., 1996). McCrae and Costa describe individuals who rank strongly in agreeableness as "eager to cooperate and avoid conflict" (1987). These descriptors suggest that agreeableness may lead to conformity and therefore mitigate creativity in groups. Creativity has conceptually been linked to independence of thought and action. For example, Barron and Harrington proposed "independence of judgment" and "autonomy" to be attributes of creative individuals (1981).

Conscientiousness

Individuals with high levels of conscientiousness are characterized to have strong impulse control, organization, persistence, and responsibility (Costa & McCrae, 1992; Goldberg, 1992; Hogan & Ones, 1997; Lee & Ashton, 2004). Previous research has not been able to find a straightforward and consistent relationship between conscientiousness and creativity. Some research and theories propose that low levels of conscientiousness predict creativity (Wolfradt & Pretz, 2001; Walker et al., 1995). George and Zhou (2001) found that high conscientiousness tends to lower levels of creativity, especially when under close monitoring by supervisors and around unhelpful co-workers. Still others declare to be unable to discover a link between the two factors at all (King et al., 1996; McRae, 1987; Silvia et al., 2008).

Diversity

In order to increase team performance, team members should be heterogeneous in their individual characteristics. Even more so than demographic diversity, cognitive diversity, has shown that any team can have an aptitude for creativity (Van der Vegt & Janssen, 2003). Frequently studied individual characteristics that influence team performance include competencies, personality traits, and gender (West, 2012). Certain personality traits such as agreeableness and conscientiousness demonstrate a positive correlation with team performance (Sung & Choi, 2009).

Lau and Murnighan (1998) advanced the conceptualization of diversity composition by considering team faultlines. When individual team members' diversity characteristics align, a tendency to form homogenous subgroups occurs (Lau & Murnighan, 1998). Prone to experiencing intergroup biases, these faultline teams have the potential to hinder team learning and performance (Lau & Murnighan, 1998). Thus, diversity can also present potential risks, such as interpersonal conflicts, negative emotionality, and stress which may compromise team cohesiveness and performance (De Dreu & Weingart, 2003; Jehn et al., 1999; Keller, 2001).

Chapter 3

HYPOTHESES

A central hypothesis will be established to serve as this study's foundation. This initial hypothesis proposes a relation between individual extrinsic motivation and team creativity. In order to analyze the relationship between extrinsic motivation and creativity further, variables including functionality, personality and demography will be hypothesized to influence the relationship established in the first foundational conjecture. The core idea behind the reasoning of the conjectures are based upon previous research of similar interest subject areas. All variables will be considered at an averaged team level.

The primary purpose of this study is to assess whether extrinsic motivation affects creativity. Based on previous research on the subject (Eisenberger & Shanock, 2003; Gagné & Deci, 2005; Kasof et al., 2007), this study will hypothesize that individual extrinsic motivation tends to be positively related to team creativity. Therefore, the sample group of this study is predicted to respond positively to survey items measuring extrinsic motivational factors and a high level of team creativity. Hypothesis one follows below:

H1: Extrinsic motivation is positively related to team creativity.

Zhu and colleagues (2016) found extrinsic motivation to positively relate to a within team competitive climate. However, when it comes to functioning teams Lencioni (2005) asserts the importance of putting aside desires of individual benefit in favor of team success. With competitive climates being negatively related to collaborative climates (Zhu et al., 2016), it is

hypothesized that a higher degree of team functionality will result in extrinsic motivation causing team creativity to decrease.

H2: Team functionality will interact with extrinsic motivation such that higher functionality under higher extrinsic motivation will result in decreased team creativity.

Many scholars assert that diversity within teams has the potential to present risks such as interpersonal conflicts and decreased cohesiveness (De Dreu & Weingart, 2003; Jehn et al., 1999; Keller, 2001). Furthermore, other scholars argue that the presence of external rewards can facilitate a rather competitive environment, discouraging collective behavior (Auh & Menguc, 2013; Osterloh & Frey, 2000). As a result, it is hypothesized that a higher degree of team diversity combined with extrinsic motivation will cause team creativity to decrease.

H3: Demographic diversity will interact with extrinsic motivation such that higher diversity under higher extrinsic motivation will result in decreased team creativity.

In terms of conscientiousness and creativity, the relationship is unclear. McCrae and colleagues classified "daydream[ing]" and "engag[ing] in fantasy" as terms that indicate low conscientiousness (McCrae et al., 1986). With the ability to fantasize being a skill very much in line with creativity, the lack of imagination associated with high conscientiousness neglects to characterize a creative individual (King et al., 1996). However, the ability to be creative is not useful unless matched with some productivity. Self-discipline and hard work being traits of high conscientiousness are vital for creative productivity (Cropley, 1990). Thus, in terms of conscientiousness, uncertainty exists on whether its existence is beneficial to creative output.

According to a study conducted by Komarraju and her colleagues, extrinsic motivation and conscientiousness exemplify a positive, direct relationship (Komarraju et al., 2009). Furthermore, some studies propose that low levels of conscientiousness predict creativity (Wolfradt & Pretz, 2001; Walker et al., 1995), while high conscientiousness lowers levels of

creativity (George & Zhou, 2001). As a result, decreased conscientiousness combined with higher extrinsic motivation is predicted to increase creativity.

H4: Conscientiousness will interact with extrinsic motivation such that lower conscientiousness under higher extrinsic motivation will result in greater team creativity.

Komarraju and colleagues (2009) discovered that although agreeableness did not prove to have a strong relationship with extrinsic motivation, it did demonstrate a significant, indirect relationship with amotivation. Agreeableness was also found to have a significant positive correlation with academic achievement (Komarraju et al., 2009). However, empirical evidence shows that people high in agreeableness demonstrate fewer creative accomplishments (King et al., 1996). But markers of low agreeableness, such as hostility, predict higher levels of creative achievement (Feist, 1998). With previous research in mind, low levels of agreeableness combined with higher levels of extrinsic motivation will be predicted to greater creativity.

H5: Agreeableness will interact with extrinsic motivation such that lower agreeableness under higher extrinsic motivation will result in greater team creativity.

Many studies have found openness to experience to be a positive predictor of creativity (McCrae, 1987; King et al., 1996; Dollinger et al., 2004). However, one's openness to experience may not come to fruition unless they happen to be interested in performing the task (Tett & Burnett, 2003). According to Tett & Burnett's (2003) trait activation theory, whether it be intrinsic or extrinsic, proper task motivation can help activate one's openness in order to increase their creative performance. As a result, it is hypothesized that the more openness to experience is present among individual team members, with extrinsic motivation as a facilitator, team creativity will increase.

H6: Openness to experience will interact with extrinsic motivation such that higher openness under higher extrinsic motivation will result in greater team creativity.

Chapter 4

METHOD

The purpose of this study is to investigate the relationship between extrinsic motivation and creativity within diverse teams. In order to answer the question at hand, a research survey was constructed. This survey was distributed via email to students collaborating in teams for completion of coursework in Sections 1 & 6 of the course Principles of Management at the University of Mississippi. The survey was made available for completion from April 1, 2020 to April 3, 2020. The original purpose of this study was to identify the effect of extrinsic motivation on team creativity in organizations; consequently, a relevant survey was distributed among the Strategic Partnerships division of ALSAC/St. Jude. Unfortunately, not enough responses were able to be collected prior the organization's initiative to restructure and work from home as a response to the COVID-19 pandemic. Thus, the survey was modified and distributed amongst members of teams participating in business-related coursework at the University of Mississippi. Students enrolled in Principles of Management are still a suitable target sample because 40% of the course grade is based on group activities. Within the selected sections of the course, teams are assigned, and a team leader is approved, as would happen in most organizational scenarios. Furthermore, existing team member discrepancies allows this study to comprehensively examine whether extrinsic motivation affects creativity across several variations of team compositions.

Survey

The survey was structured to include questions of demographic nature as well as metrics of team functionality, team creativity, individual motivation, and the personality variables openness to experience, agreeableness, and conscientiousness. Aside from demographic self-reports, respondents are asked to rate statements or questions in accordance to Scale 1 and Scale 2 below:

Scale 1: {1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Usually, 5 = Always}

Scale 2: {1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree}

In order to categorize and identify teams, survey participants were initially asked to specify which management course they belong to and the team that they will be referencing in completion of the study. Subsequently, respondents were asked to rate statements assessing team functionality using Scale 1. Lencioni (2007) suggests measuring team dysfunctionality using five different aspects: trust, conflict, commitment, accountability and results. However, for the purposes of this study we will only consider the composite score, rather than the subscores. Furthermore, this study will reverse the coding of Lencioni (2007) to measure team functionality, rather than dysfunctionality. Following an assessment of team functionality, respondents were asked to rate statements evaluating their team's creativity according to Scale 2. The creativity scale was adapted from Scott and Bruce (1994), and Zhou and George (2001) to measure team creativity within the classroom opposed to individual creativity within an organization. Participants were also asked to rate individual motivational factors in relation to why they are presently involved in their coursework. The questions are split, covering both motivational factors of extrinsic and intrinsic character (Tremblay et al., 2009). Next, three separate blocks of

survey questions originating from the International Personality Item Pool Database assess openness to experience, agreeableness and conscientiousness respectively (IPIP, 2019).

Finally, survey participants were asked to specify their age, gender, academic classification, affiliation with institutions such as the business school, the honors college, and Greek life. Participants were also asked whether they knew any of their team members prior to their team placement.

From the sample group pulled from the course Principles of Management at the University of Mississippi, 124 students were contacted. A total of 77 sets of responses were recorded, three of which were incomplete for a completion rate of 62.1 percent. The three incomplete responses were excluded from further analysis. Of the 74 respondents who completed the survey, 42 (56.8%) originate from Section 1 and 32 (43.2%) from Section 2 of the Principles of Management course. The average respondent has been enrolled in the business school for four years. Only five respondents (6.8%) were members of the University's Honors College, and 69 (93.2%) respondents were not. Furthermore, 34 respondents (45.9%) indicated membership within Greek Life, while the remaining 40 participants (54.1%) did not. The academic classification of the students are as follows: one respondent Freshmen (1.4%), 11 Sophomores (14.9%), 54 Juniors (73%), and eight Seniors (10.8%). 10 respondents (14.9%) knew one or more team members prior to being placed in a group with them, 63 (85.1%) did not. Of those 10 participants, eight knew only one member from before, and the remaining two knew two from before. Furthermore, 50 respondents (67.6%) indicate male as their gender and 24 (32.4%) female. Finally, the ethnicity distribution is as follows: 58 participants (78.4%) indicated that they were White or Caucasian, 9 (12.2%) Black or African American, 3 (4.1%) Hispanic or Latino, 3 (4.1%) Asian or Asian American, and one preferred not to respond.

Respondents' answers to gender, ethnicity and membership within Greek life and/or the Honors College served as measures for demographic diversity. The variance in answers within a team to the demographic questions determined that team's diversity score. Higher variance among team members' answers to these questions resulted in demonstrating higher diversity within the team. From this point forward, the diversity score is referred to as "diversity".

Analysis

Prior to performing a regression analysis, the variables were tested for reliability using Cronbach's Alpha. Survey questions were considered per dimension (i.e. for each measurable variable). The diversity value was excluded from reliability testing because it was self-constructed using several non-scale parameters. According to Hair et al., (2010) alpha values < .20 indicate a less reliable measure, levels of .20 - .40 as rather reliable, .40 - .60 as quite reliable, .60 - .80 as reliable, and .80 – 1.00 as very reliable. Creativity, functionality and extrinsic motivation held values above 0.8, indicating high reliability. The moderation variables ranged from .40 - .80, indicating moderate reliability. Intrinsic motivation and amotivation held relatively low values, likely because of the small number of survey questions covering these topics. However, these two variables were not primary interests in this study. (see Table 1)

Table 1. Reliability Analysis

	N(Questions)	N(Respondents)	Cronbach's Alpha
Diversity	13	72	.940
Functionality	25	72	.812
Extrinsic motivation	12	72	.842
Intrinsic motivation	3	72	.341
Amotivation	3	72	.016
Conscientiousness	10	72	.447
Agreeableness	10	72	.601
Openness to experience	10	72	.596

The survey comprised both individual and team metrics. In the cases of team functionality and team creativity, individual answers were aggregated to the respondent's respective team. In order to justify that grouping individual perceptions represent one total team value; a level of agreement needs to be established within the group. James, Demaree and Wolf (1984) developed the so-called within-group agreement test (rWG). This study will use the rWG-test to determine if within-group agreement can be established, and therefore justify the use of team level values for all dependent and independent variables in the analysis. Table 2 displays the results of running a rWG(j) test on team functionality and team creativity. rWg(j) levels were computed per team and then averaged for Table 2 below.

Table 2. rWG(j) Results

rWG(j)	Functionality	Creativity
min	0.965743	0.968835
max	0.990625	0.994759
mean	0.979471	0.984086
median	0.981076	0.984329

The results from the rWG-test determined that a team level study can be conducted. The average level of within-team agreement is high in respect to functionality and creativity. As a result, all measurable variables in this study can be grouped and averaged by the number of team members. This approach provides one averaged value per team per measurable variable, instead of one averaged value per respondent. To constitute a valid team, the number of members within a group must be more than one. Consequently, two additional respondents were excluded in the analysis, making the total number of respondents 72. A total of 19 complete teams remain eligible for analysis, with enough members to satisfy the condition. From this point forward, all variables are considered and analyzed at team level averages.

Hierarchical multiple regression models were constructed to study the direct effect in Hypothesis 1, as well as the moderation effects in Hypothesis 2-6. A moderating, or interaction variable, moderates the effect between the dependent variable and the main independent variable (Musairah, 2015). Significance of the interaction variable subjects it for further analysis. For this study, creativity served as the dependent variable, with extrinsic motivation as the main predictor variable. Demographic diversity, functionality, openness to experience, agreeableness, and conscientiousness were other predictor variables considered to influence creativity in interaction with extrinsic motivation. To minimize the risk of multicollinearity in the moderation analysis, the variables used to compute the interaction variables were centered beforehand (i.e. the mean was subtracted from each variable value). For the hierarchical moderated regressions, the analysis was conducted in blocks. Covariates were added into block one, including the main independent variable, extrinsic motivation. The moderator and interaction variable, both unique to the respective hypothesis, were added into block two and three, respectively.

Chapter 5

RESULTS

Hierarchical multiple regression models were set up to answer the hypotheses, with creativity as the dependent variable. Predictor variables were extrinsic motivation, intrinsic motivation, amotivation, diversity, team functionality, and personality variables. Moderation effects were studied in separate regression models, unique to each hypothesis. Basic descriptive statistics of the input variables can be seen in Table 3. Diversity differentiates significantly in mean compared to other input variables; this is due to the variable being a self-constructed team average value using several survey questions covering demographics.

Table 3. Descriptive Statistics: Team Level Input Variables

Table 3 displays descriptive statistics over the regression input variables. Mean, Std. Dev and the number of complete teams (N) can be displayed.

	Mean	Std. Dev	N
Creativity	3.768	.570	19
Functionality	3.660	.486	19
Extrinsic motivation	3.912	.274	19
Intrinsic motivation	3.515	.352	19
Amotivation	3.641	346	19
Openness to experience	3.335	.231	19
Agreeableness	3.400	.256	19
Conscientiousness	3.371	.240	19
Diversity	.799	.436	19

In terms of input variable correlation, creativity is significantly correlated with extrinsic motivation, intrinsic motivation, amotivation, agreeableness and conscientiousness at $p < .01$. Openness to experience is significant $p < .05$. Only functionality reaches a significance level of $p < .001$. Diversity is not found to be a significantly related to creativity. For the predictor variables, functionality is significantly correlated to all three motivational factors at $p < .01$, and significant at $p < .05$ with agreeableness and conscientiousness. Extrinsic motivation is significantly correlated with intrinsic motivation and amotivation at $p < .01$ and $p < .001$ separately. Furthermore, a significant correlation between intrinsic motivation and openness to experience is identified at $p < .001$. Agreeableness and conscientiousness are also significant at $p < .001$. Negative correlation can be identified between diversity and functionality, extrinsic motivation, and conscientiousness separately; however, non-significant. (see Table 4).

Table 4. Correlation Matrix: Input Variables

Table 4 displays a Pearson correlation matrix over the regression input variables.

	Creativity	Functionality	Extrinsic	Intrinsic	Amotivation	Openness	Agreeableness	Conscientiousness	Diversity
Creativity	1.000								
Functionality	.884***	1.000							
Extrinsic motivation	.636**	.646**	1.000						
Intrinsic motivation	.583**	.562**	.555**	1.000					
Amotivation	.682**	.620**	.756***	.474*	1.000				
Openness	.332*	.307	.257	.697***	.359	1.000			
Agreeableness	.547**	.409*	.286	.509*	.435*	.463*	1.000		
Conscientiousness	.571**	.397*	.341	.232	.343	.303	.653***	1.000	
Diversity	.003	-.138	-.015	.236	.244	.230	.436*	-.036	1.000

Note: *(*) indicates significance at p<.05, (**) indicates significance at p<.01, and (***) indicates significance at p<.001*

For Model 1 in the regression (with extrinsic motivation excluded), approximately 79.3 percent of the variation in the dependent variable can be explained by the predictor variables ($Adj\ R^2$ = .793). (see Table 5). The model indicates functionality to be a significant predictor of creativity at p < .01 (β = .640, t = 3.556, p = .005). No significant effects are displayed in the motivational factors, intrinsic motivation (β = .173, t = .943, p = .366), and amotivation (β = .145, t = .943, p = .336). No significant effect can be identified in in the personality variables, conscientiousness (β = .277, t = 1.664, p = .129), agreeableness (β = -.014, t = -.069, p = .946) and openness to experience (β = -.128, t = -.811, p = .435). Diversity is not significant either (β = .060, t = .386, p = .707).

Table 5. Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,935[a]	,873	,793	,25932	,873	10,837	7	11	,000
2	,938[b]	,879	,783	,26550	,006	,494	1	10	,498

a. Predictors: (Constant), Diversity, Conscientiousness, Intrinsic, Amotivation, Openness, Functionality, Agreeableness

b. Predictors: (Constant), Diversity, Conscientiousness, Intrinsic, Amotivation, Openness, Functionality, Agreeableness, Extrinsic

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,101	7	,729	10,837	,000
	Residual	,740	11	,067		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			

H1. The first hypothesis predicted that extrinsic motivation would be positively related to team creativity. The correlation analysis indicated extrinsic motivation to be significantly positively correlated to creativity at p < .01 However, in Model 2 of the hierarchical regression model, no significant F-change can be identified when extrinsic motivation is incorporated (see

Table 5). Extrinsic motivation is not a significant predictor of creativity; thus, Hypothesis 1 is not supported.

Eisenberger & Shanock (2003), Gagné & Deci (2005) and Kasof et al., (2007) found extrinsic motivation to be positively related to team creativity. This study was able to identify a significant correlation between extrinsic motivation and creativity. However, the first multiple linear regression, did not find extrinsic motivation to be a significant predictor of creativity. The partial correlation of extrinsic motivation in the model is -.217. This result presents the possibility of extrinsic motivation being a negative predictor of creativity, as opposed to the previously mentioned studies.

For hypotheses two through six, the moderation effects of functionality, demographic diversity, conscientiousness, agreeableness, and openness to experience were studied. The moderator variables were "interacted" with extrinsic motivation (moderator *x* extrinsic motivation). A hierarchical moderated regression was set up for each of the hypotheses. For the regressions, all covariate variables, including extrinsic motivation, were entered into the first block. The moderator unique to the respective hypothesis was placed in the second block, with the respective interaction variable in the third block.

H2. The second hypothesis predicted that functionality would interact with extrinsic motivation such that higher functionality under higher extrinsic motivation will result in decreased team creativity. For the first model in Table 6, containing all covariate variables except the moderator for functionality, functionality, and the interaction variable, an *adjusted* R^2 of .732 can be identified. When the moderator for functionality was added into Model 2, the R^2–*change* amounted to .148, which is significant at $p < .05$. Vital for this hypothesis, Model 3

indicates a R^2–*change* of .052, also significant at $p < .05$. Significance in the interaction variable indicates that functionality tends to moderate the relationship between extrinsic motivation and creativity.

Table 6. Regression Model: Moderation Effect of Functionality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,855[a]	,732	,561	,37749	,732	4,284	7	11	,016
2	,938[b]	,879	,783	,26550	,148	12,236	1	10	,006
3	,965[c]	,932	,863	,21048	,052	6,912	1	9	,027

a. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Amotivation, Intrinsic, Agreeableness

b. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Amotivation, Intrinsic, Agreeableness, Functionality

c. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Amotivation, Intrinsic, Agreeableness, Functionality, Extrinsic_x_Functionality_Centered

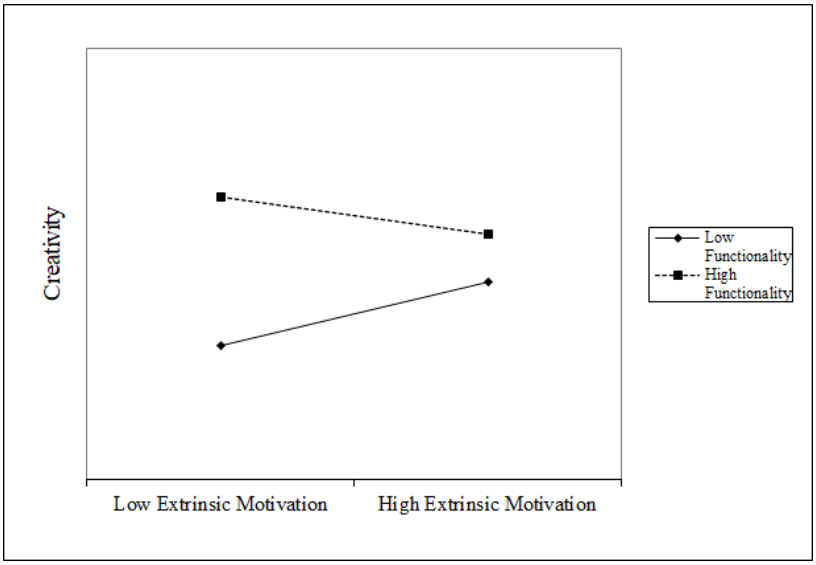
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,274	7	,611	4,284	,016
	Residual	1,567	11	,142		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			
3	Regression	5,442	9	,605	13,649	,000
	Residual	,399	9	,044		
	Total	5,841	18			

As seen in Figure 2, the relationship between extrinsic motivation and creativity changes based on the level of functionality, in line with the interaction variable being significant. For low levels of functionality there is a positive relationship between extrinsic motivation and creativity. For high levels of functionality, the relationship between extrinsic motivation is negative. When functionality increases, the effect of extrinsic motivation on creativity decreases. Due to the interaction effect displayed in Figure 2, coupled with the significance of the interaction variable, Hypothesis 2 is supported.

Figure 2. Moderation Effect of Functionality

Figure 2 displays the relationship between dependent variable (creativity), independent variable (extrinsic motivation) and moderator (functionality).



H3. The third hypothesis predicted that demographic diversity would interact with extrinsic motivation such that higher diversity under higher extrinsic motivation will result in decreased team creativity. For first model in Table 7, containing all covariate variables except the moderator (diversity), and the interaction variable, an adjusted R^2 of .801 can be identified. When the moderator (diversity) was added in Model 2, the R^2*–change* amounts to an insignificant .001. Vital for this hypothesis, Model 3 indicates an R^2*–change* of .001, also insignificant. No significance in the interaction variable indicates no moderation effect of diversity on the relationship between creativity and extrinsic motivation. Thus, Hypothesis 3 is not supported.

Table 7. Regression Model: Moderation Effect of Diversity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,937[a]	,878	,801	,25405	,878	11,357	7	11	,000
2	,938[b]	,879	,783	,26550	,001	,072	1	10	,794
3	,938[c]	,880	,760	,27905	,001	,053	1	9	,823

a. Predictors: (Constant), Conscientiousness, Intrinsic, Amotivation, Functionality, Openness, Agreeableness, Extrinsic

b. Predictors: (Constant), Conscientiousness, Intrinsic, Amotivation, Functionality, Openness, Agreeableness, Extrinsic, Diversity

c. Predictors: (Constant), Conscientiousness, Intrinsic, Amotivation, Functionality, Openness, Agreeableness, Extrinsic, Diversity, Extrinsic_x_Diversity_Centered

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,131	7	,733	11,357	,000
	Residual	,710	11	,065		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			
3	Regression	5,140	9	,571	7,335	,003
	Residual	,701	9	,078		
	Total	5,841	18			

Previous research asserts that diversity within teams decreases cohesiveness and increases interpersonal conflicts (De Dreu & Weingart, 2003; Jehn et al., 1999; Keller, 2001). Other studies have argued that the presence of extrinsic motivation discourages collective team behavior (Auh & Menguc, 2013; Osterloh & Frey, 2000). However, as a result of the insignificance of the moderator and interaction variable in this study, no meaningful comparisons can be made.

H4. The fourth hypothesis predicted that conscientiousness would interact with extrinsic motivation such that lower conscientiousness under higher extrinsic motivation will result in greater team creativity. Table 8 contains the hierarchical moderated regression for conscientiousness as the moderator. Model 1 contains all covariate variables except the moderator and the interaction variable. The first model indicates an *adjusted* R^2 of .743. When

the moderator conscientiousness was added in Model 2, the R^2*–change* amounted to an insignificant .036. Vital for this hypothesis, Model 3 indicates a R^2*–change* of .062 when including the interaction variable, which is significant at $p < .05$. Significance in the interaction variable indicates that conscientiousness tends to moderate the relationship between extrinsic motivation and creativity.

Table 8. Regression Model: Moderation Effect of Conscientiousness

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,918[a]	,843	,743	,28872	,843	8,439	7	11	,001
2	,938[b]	,879	,783	,26550	,036	3,008	1	10	,114
3	,970[c]	,941	,883	,19486	,062	9,565	1	9	,013

a. Predictors: (Constant), Diversity, Extrinsic, Openness, Agreeableness, Functionality, Intrinsic, Amotivation

b. Predictors: (Constant), Diversity, Extrinsic, Openness, Agreeableness, Functionality, Intrinsic, Amotivation, Conscientiousness

c. Predictors: (Constant), Diversity, Extrinsic, Openness, Agreeableness, Functionality, Intrinsic, Amotivation, Conscientiousness, Extrinsic_x_Conscientiousness_Centered

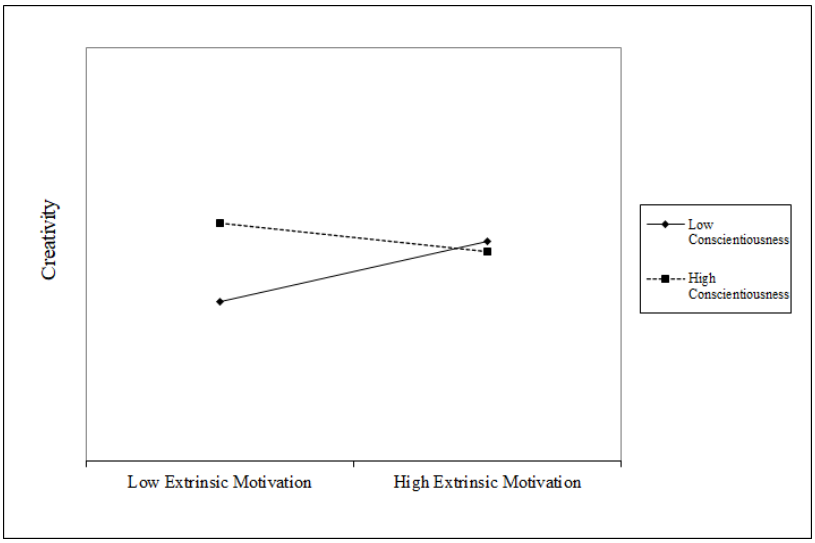
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,924	7	,703	8,439	,001
	Residual	,917	11	,083		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			
3	Regression	5,499	9	,611	16,093	,000
	Residual	,342	9	,038		
	Total	5,841	18			

As seen in Figure 3, the relationship between extrinsic motivation and creativity changes with the level of conscientiousness. For low levels of conscientiousness, a positive relationship can be established between extrinsic motivation and creativity. For high levels of conscientiousness, the relationship between extrinsic motivation turns into a negative one. The interaction variable is significant at $p < .05$ and lower conscientiousness under higher extrinsic motivation will increase creativity according to Figure 3. Consequently, Hypothesis 4 is supported.

Figure 3. Moderation Effect of Conscientiousness

Figure 3 displays the relationship between dependent variable (creativity), independent variable (extrinsic motivation) and moderator (conscientiousness).



A study by Komarraju and colleagues (2009) proposes a positive relationship between extrinsic motivation and conscientiousness. Similarly, the results of this study show a positive correlation between the variables; however, it is not significant (r = .341, p = .077). In terms of the relationship between conscientiousness and creativity, previous studies suggest that lower levels of conscientiousness predict creativity (Wolfradt & Pretz, 2001; Walker et al., 1995). Furthermore, George and Zhou (2001) found that high conscientiousness tends to lower levels of creativity. In correspondence with these studies, the results of the moderation analysis in Figure 3 indicate that low levels of conscientiousness paired with high levels of extrinsic motivation results in greater creativity. Furthermore, when levels of conscientiousness are increased, the relationship between extrinsic motivation and creativity decreases.

H5. The fifth hypothesis predicted that agreeableness would interact with extrinsic motivation such that lower agreeableness under higher extrinsic motivation will result in greater team creativity. Table 9 contains the hierarchical moderated regression with agreeableness as

moderator. In line with previous method, Model 1 contains all covariate variable except the moderator and the interaction variable. The first model indicates an *adjusted* R^2 of .801. When agreeableness was added to Model 2, the R^2*–change* amounted to an insignificant .055. Model 3 indicates a R^2*–change* of .057 when including the interaction variable, which is significant at $p <$ .05. Significance in the interaction variable indicates that agreeableness tends to moderate the relationship between extrinsic motivation and creativity.

Table 9. Regression Model: Moderation Effect of Agreeableness

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,937[a]	,879	,801	,25384	,879	11,378	7	11	,000
2	,938[b]	,879	,783	,26550	,001	,055	1	10	,819
3	,968[c]	,937	,873	,20274	,057	8,150	1	9	,019

a. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Functionality, Amotivation, Intrinsic

b. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Functionality, Amotivation, Intrinsic, Agreeableness

c. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Openness, Functionality, Amotivation, Intrinsic, Agreeableness, Extrinsic_x_Agreeableness_Centered

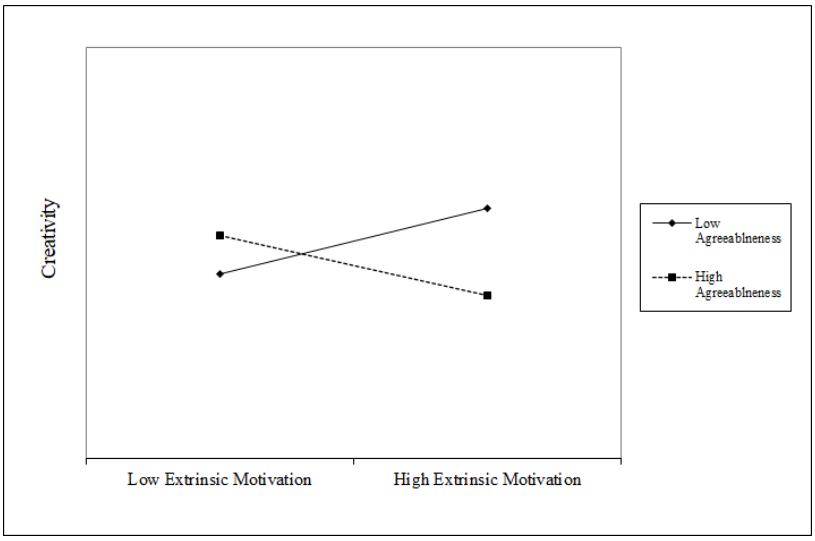
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,132	7	,733	11,378	,000
	Residual	,709	11	,064		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			
3	Regression	5,471	9	,608	14,790	,000
	Residual	,370	9	,041		
	Total	5,841	18			

Figure 4 shows the relationship between creativity and extrinsic motivation with agreeableness as moderator. For low levels of agreeableness there is a positive linear relationship between extrinsic motivation and creativity. When agreeableness is high, the relationship between creativity and extrinsic motivation turns into a negative one. The interaction variable is significant and, as Figure 4 depicts, lower agreeableness under higher extrinsic motivation results in greater creativity. Thus, Hypothesis 5 is supported.

Figure 4. Moderation Effect of Agreeableness

Figure 4 displays the relationship between dependent variable (creativity), independent variable (extrinsic motivation) and moderator (agreeableness).



Agreeableness has not been said to have a strong relationship with extrinsic motivation (Komarraju et al., 2009). Likewise, the results of this study indicate an insignificant correlation between agreeableness and extrinsic motivation (r = .286, p = .118). In terms of agreeableness and creativity, King et al., (1996) suggests that high levels of agreeableness are related to fewer creative accomplishments. Furthermore, Feist (1998) suggests that low levels of agreeableness predict higher levels of creativity. In line with previous research, this study demonstrates that low levels of agreeableness in interaction with higher levels of extrinsic motivation increase levels of creativity.

H6. The sixth hypothesis predicted that openness to experience will interact with extrinsic motivation such that higher openness to experience under higher extrinsic motivation will result in greater team creativity. Table 10 contains the hierarchical moderated regression with openness to experience as moderator. In line with previous method, Model 1 contains all covariate variable except the moderator and the interaction variable. The first model indicates an

adjusted R^2 of .783. When agreeableness was added into Model 2, the R^2*–change* amounted to an insignificant .012. When the interaction variable was incorporated into Model 3, the R^2*–change* was .021, which is insignificant at $p < .05$. Insignificance of the interaction variable indicates that openness to experience do not moderate the relationship between extrinsic motivation and creativity. Thus, Hypothesis 6 is not supported.

Table 10. Regression Model: Moderation Effect of Openness to Experience

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,931[a]	,868	,783	,26515	,868	10,298	7	11	,000
2	,938[b]	,879	,783	,26550	,012	,970	1	10	,348
3	,949[c]	,901	,801	,25381	,021	1,943	1	9	,197

a. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Intrinsic, Functionality, Amotivation, Agreeableness

b. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Intrinsic, Functionality, Amotivation, Agreeableness, Openness

c. Predictors: (Constant), Diversity, Extrinsic, Conscientiousness, Intrinsic, Functionality, Amotivation, Agreeableness, Openness, Extrinsic_x_Openness_Centered

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,068	7	,724	10,298	,000
	Residual	,773	11	,070		
	Total	5,841	18			
2	Regression	5,136	8	,642	9,108	,001
	Residual	,705	10	,070		
	Total	5,841	18			
3	Regression	5,261	9	,585	9,075	,002
	Residual	,580	9	,064		
	Total	5,841	18			

McCrae (1987), King et al., (1996) and Dollinger et al., (2004) suggest openness to experience to have a positive relationship with creativity. The correlation between the two variables in this study is positive but not significant ($r = .332$, $p = .082$). Furthermore, Tett and Burnett's (2003) trait activation theory suggests that extrinsic motivation can facilitate openness to experience in order to increase creativity. The moderation analysis of this study shows no significance in the interaction variable between extrinsic motivation and creativity.

Summary

This study predicted a direct relationship between extrinsic motivation and creativity. Although it demonstrated a significant, positive correlation with creativity (see Table 3), extrinsic motivation was not a direct predictor of creativity. Table 3 also indicates high correlation between several covariates and creativity, suggesting shared variance amongst variables. This result may explain the significant correlation between extrinsic motivation and creativity, and subsequently why the relationship diminished when extrinsic motivation was studied exclusively in a separate regression block (see Table 5). Only in interaction with functionality, conscientiousness, and agreeableness, was extrinsic motivation said to have a direct relationship with creativity. Hence, Hypothesis 2, 4 and 5 were supported (see Table 11). The choice of covariates appears to be key in determining the relationship between extrinsic motivation and creativity. In correspondence with this study's findings, previous research varying in choice of covariates, also vary in outcome (Amabile, 1996; Eisenberger & Shanock, 2003; Gagné & Deci, 2005; Kasof et al., 2007).

Table 11. Summary: Hypotheses

Table 11 displays the support and R-square change for each hypothesis, with "N.S." indicating no support.

Variables	Hypothesis	Statistical support	R Square Change
Extrinsic motivation	1	N.S.	.006
Functionality	2	Supported	.052*
Diversity	3	N.S.	.001
Conscientiousness	4	Supported	.062*
Agreeableness	5	Supported	.057*
Openness to experience	6	N.S.	.021

Note: *(*) indicates significance at p<.05, (**) indicates significance at p<.01, and (***) indicates significance at p<.001*

Chapter 6

CONCLUSION

This study has analyzed the relationship between extrinsic motivation and creativity on a team-level basis. A survey was constructed and distributed to students at the University of Mississippi. 77 complete sets of answers covering questions of creativity, functionality, diversity, motivation, conscientiousness, agreeableness, and openness to experience were collected and subjected to statistical analysis. Individual responses were aggregated to the team level. With previous research as a foundation, six hypotheses were formulated in this study. A hierarchical multiple regression model was set up to test the predictability of extrinsic motivation with creativity as the dependent variable. Furthermore, hierarchical moderation analysis was conducted for functionality, diversity, and the personality variables.

Three out of six hypotheses are supported for the teams in this study. The results indicate that although it has a significant, positive correlation with creativity, extrinsic motivation is not a significant predictor of creativity. After conducting hierarchical moderation analyses, several conclusions can be drawn. Significant moderation effects exist for functionality, conscientiousness, and agreeableness. High levels of functionality in interaction with high levels of extrinsic motivation decreases creativity. Low levels of conscientiousness and agreeableness in separate interaction with high levels of extrinsic motivation increases creativity. When pairing extrinsic motivation with either diversity or openness to experience, the interaction variables lack significance, leaving them invalid for interpretation.

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Appendix

SURVEY

Honors Thesis Survey

Start of Block: Block 1

Hi, my name is Gita Viswanathan, and I am conducting a research study as a part of the Sally McDonnell Barksdale Honors College at the University of Mississippi.

This survey will ask you questions regarding your opinions and beliefs as a member of a team, and will take approximately 7-8 minutes to complete. Your responses will remain strictly confidential and anonymous. This survey will be closed at 11:59 pm on Friday, April 3rd.

End of Block: Block 1

Start of Block: Default Question Block

2. What is your MGMT 371 section?

- ○ M,W,F 11:00-11:50 am (Section 6) (1)
- ○ M,W,F 1:00-1:50 pm (Section 1) (2)

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3. What is your team number you'll be referencing in completion of this survey?

▼ Group 1 (1) ... Group 12 (12)

End of Block: Default Question Block

Start of Block: Block 8

4. Keeping the team chosen in the previous question in mind, answer the following quickly. Please rate the statements below on a scale from 1-5. 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Usually, 5 = Always

	1-Never (1)	2-Rarely (2)	3-Sometimes (3)	4-Usually (4)	5-Always (5)
Team members admit their mistakes. (1)	○	○	○	○	○
Team members are passionate and unguarded in their discussion of issues. (2)	○	○	○	○	○
Team members are quick to point out the contributions and achievements of others. (3)	○	○	○	○	○
During team meetings, the most important and difficult issues are discussed. (4)	○	○	○	○	○
Team members acknowledge their weaknesses to one another. (5)	○	○	○	○	○
Team members voice their	○	○	○	○	○

opinions even at the risk of causing disagreement. (6)					
Team members point out one another's unproductive behaviors. (7)	○	○	○	○	○
Team members ask for help without hesitation. (8)	○	○	○	○	○
Team members leave meetings confident that everyone is committed to the decisions that were agreed upon. (9)	○	○	○	○	○
During discussions, team members challenge one another about how they arrived at their conclusions and opinions. (10)	○	○	○	○	○
Team members ask one another for input	○	○	○	○	○

regarding their areas of responsibility. (11)					
When the team fails to achieve collective goals, each member takes personal responsibility to improve the team's performance. (12)	○	○	○	○	○
Team members willingly make sacrifices in their areas for the good of the team. (13)	○	○	○	○	○
Team members are quick to confront peers about problems in their respective areas of responsibility. (14)	○	○	○	○	○
Team members acknowledge and tap into one another's skills and expertise. (15)	○	○	○	○	○

The team is clear about its direction and priorities. (16)	○	○	○	○	○
All members of the team are held to the same high standards. (17)	○	○	○	○	○
When conflict occurs, the team confronts and deals with the issue before moving to another subject. (18)	○	○	○	○	○
The team is aligned around common objectives. (19)	○	○	○	○	○
The team consistently achieves its objectives. (20)	○	○	○	○	○
The team is decisive, even when perfect information is not available. (21)	○	○	○	○	○
Team members value collective success more	○	○	○	○	○

than individual achievement. (22)					
Team members consistently follow through on promises and commitments. (23)	○	○	○	○	○
Team members offer unprovoked, constructive feedback to one another. (24)	○	○	○	○	○
Team members support group decisions even if they initially disagreed. (25)	○	○	○	○	○

End of Block: Block 8

Start of Block: Block 6

5. Using the 5-point scale below, please rate the extent to which you agree or disagree with the following statements in relation to the team you are currently a part of in MGMT 371:

	1-Strongly disagree (1)	2-Disagree (2)	3-Neutral (3)	4-Agree (4)	5-Strongly agree (5)
My team suggests new ways to increase quality. (1)	○	○	○	○	○
My team searches out new processes and techniques for completing tasks. (2)	○	○	○	○	○
My team comes up with new and practical ideas to our improve performance. (3)	○	○	○	○	○
My team comes up with creative solutions to problems. (4)	○	○	○	○	○
My team often has a fresh approach to problems (5)	○	○	○	○	○
My team develops adequate plans and schedules for the implementation of new ideas. (6)	○	○	○	○	○
My team is a good source of creative ideas.	○	○	○	○	○

(7)					
My team exhibits creativity on the job when given the opportunity to. (8)	○	○	○	○	○
My team often has new and innovative ideas. (9)	○	○	○	○	○
My team promotes and champions ideas to others. (10)	○	○	○	○	○
My team suggests new ways of performing our work tasks. (11)	○	○	○	○	○
My team is not afraid to take risks. (12)	○	○	○	○	○
My team suggests new ways to achieve our goals or objectives. (13)	○	○	○	○	○

End of Block: Block 6

Start of Block: Block 9

6. Using the 5-point scale below, please rate to what extent you agree or disagree with the following statements in relation to why you are presently involved in your coursework as an individual student in MGMT 371:

	1-Strongly disagree (1)	2-Disagree (2)	3-Neutral (3)	4-Agree (4)	5-Strongly agree (5)
Because I want to be very good at my coursework, otherwise I would be very disappointed. (1)	○	○	○	○	○
Because this is the type of work I chose to do to attain a certain lifestyle. (2)	○	○	○	○	○
Because it has become a fundamental part of who I am. (3)	○	○	○	○	○
Because I derive much pleasure from learning new things. (4)	○	○	○	○	○
Because I chose this type of work to attain my career goals. (5)	○	○	○	○	○
For the satisfaction I experience from taking on interesting	○	○	○	○	○

challenges. (6)					
Because I want to succeed in my coursework, if not I would be very ashamed of myself. (7)	○	○	○	○	○
I don't know, too much is expected of us. (8)	○	○	○	○	○
Because it is the type of work I have chosen to attain certain important objectives. (9)	○	○	○	○	○
I don't know why, we are provided with unrealistic working conditions. (10)	○	○	○	○	○
Because it is part of the way in which I have chosen to live my life. (11)	○	○	○	○	○
Because it allows me to earn a good grade. (12)	○	○	○	○	○
Because this work is a part	○	○	○	○	○

of my life. (13)					
Because this type of work provides me with security. (14)	○	○	○	○	○
For the satisfaction I experience when I am successful at doing difficult tasks. (15)	○	○	○	○	○
Because of the GPA it provides me. (16)	○	○	○	○	○
I ask myself this question, I don't seem to be able to manage the important tasks related to this work. (17)	○	○	○	○	○
Because I want to be a "winner" in life. (18)	○	○	○	○	○

End of Block: Block 9

Start of Block: Block 4

7. Using the 5-point scale below, please rate the extent to which you agree or disagree with the following statements:

	1-Strongly disagree (1)	2-Disagree (2)	3-Neutral (3)	4-Agree (4)	5-Strongly agree (5)
I have a vivid imagination. (1)	○	○	○	○	○
I am not interested in abstract ideas. (2)	○	○	○	○	○
I avoid philosophical discussions. (3)	○	○	○	○	○
I carry the conversation to a higher level. (4)	○	○	○	○	○
I get excited by new ideas. (5)	○	○	○	○	○
I rarely look for a deeper meaning in things. (6)	○	○	○	○	○
I am not interested in theoretical discussions. (7)	○	○	○	○	○
I have difficulty understanding abstract ideas. (8)	○	○	○	○	○
I enjoy hearing new ideas. (9)	○	○	○	○	○

I enjoy thinking about things. (10)	○	○	○	○	○

End of Block: Block 4

Start of Block: Block 5

8. Using the 5-point scale below, please rate the extent to which you agree or disagree with the following statements:

	1-Strongly disagree (1)	2-Disagree (2)	3-Neutral (3)	4-Agree (4)	5-Strongly agree (5)
I have a good word for everyone. (1)	○	○	○	○	○
I believe that others have good intentions. (2)	○	○	○	○	○
I suspect hidden motives in others. (3)	○	○	○	○	○
I believe that I am better than others. (4)	○	○	○	○	○
I make people feel at ease. (5)	○	○	○	○	○
I am concerned about others. (6)	○	○	○	○	○
I contradict others. (7)	○	○	○	○	○
I accept people as they are. (8)	○	○	○	○	○
I make demands on others. (9)	○	○	○	○	○
I hold a grudge. (10)	○	○	○	○	○

End of Block: Block 5

Start of Block: Block 3

9. Using the 5-point scale below, please rate the extent to which you agree or disagree with the following statements:

	1-Strongly disagree (1)	2-Disagree (2)	3-Neutral (3)	4-Agree (4)	5-Strongly agree (5)
I am always prepared. (1)	○	○	○	○	○
I have things unfinished. (2)	○	○	○	○	○
I need a push to get started. (3)	○	○	○	○	○
I pay attention to details. (4)	○	○	○	○	○
I am exacting in my work. (5)	○	○	○	○	○
I finish what I start. (6)	○	○	○	○	○
I find it difficult to get down to work. (7)	○	○	○	○	○
I make plans and stick to them. (8)	○	○	○	○	○
I do just enough work to get by. (9)	○	○	○	○	○
I don't see things through. (10)	○	○	○	○	○

End of Block: Block 3

Start of Block: Block 2

10. How long have you been enrolled in the business school?

- I am not enrolled in the business school, business is my minor. (7)
- I am not enrolled in the business school, and business is NOT my minor (8)
- Less than a year (1)
- 1 year (2)
- 2 years (3)
- 3 years (4)
- 4 years (5)
- More than 4 years (6)

11. Are you a member of the Honors College?

- Yes (1)
- No (2)

12. Are you a member of Greek Life?

- Yes (1)
- No (2)

13. What is your classification?

▼ Freshman (1) ... Senior (4)

14. Did you know any of your team members prior to being placed in a group with them? If yes, How many?

- Yes (1) _____
- No (2)

15. Gender

- Male (1)
- Female (2)
- Prefer not to respond (3)

16. Race/Ethnicity

▼ White or Caucasian (1) ... Prefer not to respond (8)

End of Block: Block 2

Start of Block: Block 8

17. **Please type your student ID number into the box below for crediting purposes:**
(Your answers will remain strictly confidential, and your ID number will NOT be tied to your responses. This information will only be used to assign extra credit.)

_____

End of Block: Block 8