Abdallah Darwish

Student Number: 9865888

Supervisor: Timo van Balen

Co-Reader: Mathias Boënne

"Fresh Perspectives, Greater Innovation: The Vital Role of New Employees"

Abstract

The introduction of new employees into an organization often ignites a spark of innovation and creative problem-solving, primarily due to their unique perspectives and experiences. This study explores the interplay between this influx of fresh ideas and the pre-existing familiarity within work teams. The research uncovers an intriguing dynamic: while team familiarity of newcomers may enhance communication and coordination, it can also unintentionally stifle the innovative potential brought by these new employees. Evidence suggests that when teams become too familiar, there is a propensity towards groupthink and resistance to novel ideas, creating an environment where the innovative contributions of new employees may not be fully leveraged. This research hence underscores the need to properly manage team familiarity in ventures, by cultivating an environment that welcomes new employees with low familiarity, thereby augmenting the prospects for innovation. These conclusions highlight the need for proactive measures in forging an organizational culture that strikes a balance between the reassuring nature of familiarity and the invigorating allure of novelty.

Keywords: Newcomers, Teams, Team Familiarity, Innovative Performance.

JEL Codes: J24, M14, C12

Contents

Introduction

Teams are fundamental in attaining organizational goals and objectives and contributing to the firm's success and development (Muskat et al., 2022). The success of teams depends on the ability of members to share and integrate diverse information into their plans, decisions, and actions, feel emotionally safe, and establish exceptional and positive relationships among members (Muskat et al., 2022). Previous research has extensively examined factors contributing to high-performing teams and innovation, encompassing team structures, processes, and dynamics (Carland & Carland, 2012; Wright et al., 2007). One critical aspect of team dynamics is the influx of newcomers, which has garnered considerable attention in the literature. Cronin et al. (2011) emphasize the significance of studying group dynamics for understanding team performance. Choi and Thompson (2005) promote the role of newcomers and suggest that they can serve as a remedy to counteract stagnation and infuse new perspectives into teams.

However, the dynamics of familiarity and diversity within teams and their impact on innovative performance have sparked a debate (Arrow & McGrath, 1995; Marks et al., 2001). Team familiarity refers to the relationship between team members who have previously worked together. This familiarity may stem from the shared experiences, knowledge, and skills gained through their previous work. Even though new members are often considered drivers of innovation, their level of familiarity with the team's established practices can influence this interaction. Many authors contended that an increased level of team familiarity enhances the understanding among team members, including aspects of their expertise, weaknesses, strengths, habits, and personalities (Goodman & Shah, 1992; Huckman & Staats, 2011; Huckman et al. 2009; Muskat et al., 2022). Despite this, Muskat et al. (2022) asserted that there is a gap when it comes to understanding the impact of increased team familiarity in non-routine and non-

standardized contexts. When newcomers have a high level of familiarity, it implies they share similar experiences, perspectives, or thought processes as the existing team. As a result, the expected influx of fresh ideas might be lower since the addition of newcomers who share too much commonality with the existing team may result in homogeneity in thought, leading to potential stagnation in innovation. On the other hand, having too little familiarity may lead to conflicts or misunderstandings, disrupting team dynamics and cohesion (Argote et al., 2014; Lewis et al., 2007; Gruenfeld et al., 2000). The challenge lies in balancing the level of familiarity that newcomers have in order to stimulate innovative performance for the whole team.

The critical role of innovation in strengthening market positioning and ensuring long-term business survival has been widely recognized by both scholars and practitioners in recent years (Kamasak, 2015). To address the relentless demands of highly competitive markets and secure a sustainable competitive advantage, organizations consistently seek out innovative and unique business strategies. Given this context, our study aims to underline the relevance of innovative performance as a key consideration. Innovation performance is the measured enhancement in the value or efficiency of products or services, driven by purposeful and goal-oriented innovation efforts (De Jong et al., 2013). Thus, this study investigated the impact of the rate of newcomers and their familiarity on innovative performance in the context of venture teams in the video game development industry. Theoretical foundations drawn from team familiarity research provide the framework for this study. The hypotheses proposed in this study explored the relationship between newcomers, team familiarity, and innovative performance with data from 1978 to 2002 collected from the MobyGames database, a comprehensive repository of video game information. The focus will be on video game sequels, as this allowed us to track

team composition changes over time. Multi-level mixed-effect modeling analysis was employed to assess the relationships between the aforementioned variables.

This research has the potential to contribute significantly to the literature on team dynamics, specifically team composition, and innovative performance. It aims to address prevailing concerns and broaden our comprehension of newcomers' roles in teams. Particularly, this study reveals the essential role of team familiarity in the integration of newcomers and its impact on boosting innovative performance within teams. The role of newcomer influx rate and their familiarity with the team do not independently make a significant impact on innovative performance, which perfectly resonates with the conflicted literature. Rather, it's the interplay between these two factors that critically influences innovative performance. While the diverse skill sets and fresh viewpoints of newcomers indeed stimulate innovation, and their understanding of team operations enhances performance, these effects are predominantly potent when the dynamic interaction of newcomer influx and their familiarity is taken into account. As the influx of newcomers increases, the ones with low familiarity with the team seem to drive innovation more effectively. However, in scenarios with a lower rate of newcomer arrivals, it is those with high familiarity who demonstrate a stronger contribution to the team's innovative performance. This complexity in managing team composition for optimal innovation has implications for startups and new ventures in the video game development industry and beyond. Further investigation into these interactions and their deep impacts on teams could offer valuable insights and guidance for cultivating innovation. It is a delicate balance where the comfort and understanding of a well-acquainted team can be both a catalyst for, and a barrier to, groundbreaking innovation. Thus, by undertaking this analysis, we hope to provide

comprehensive insights that contribute to resolving some of the ongoing debate and, ultimately, influencing future research and practical applications within the field.

Theoretical Framework

The introduction of novel or minority opinions should stimulate the consideration of alternative viewpoints, resulting in a more meticulous processing of information that eventually enhances the group's decision-making ability (Phillips et al., 2008). This should be particularly applicable for non-routine tasks demanding creativity, innovation, or the blend of unique perspectives. This concept is supported by scholars like Gruenfeld (1995), Levine, Choi, and Moreland (2003), Levine, Moreland, and Choi (2001), Nemeth (1986), and Phillips (2003). Many scholars hold the view that the inclusion of new individuals in a group can amplify the group's performance due to the diverse outlooks these individuals are expected to offer. Nevertheless, tapping into the value of social diversity remains a challenging aim for several organizational groups due to another factor: team familiarity.

Team science literature defines familiarity as the degree of knowledge team members possess regarding one another (Goodman & Shah, 1992; Huckman & Staats, 2011, Muskat et al., 2022) and the level they have worked with each other (Huckman et al., 2009, Muskat et al., 2022). The effect of team familiarity on innovative performance has been the subject of conflicting arguments and empirical findings in previous studies.

Supporters argue that team familiarity positively influences performance as it fosters better coordination and cooperation among team members, as suggested by Huckman et al. (2009). On the other hand, critics suggest that well-established teams might inhibit diversity in terms of knowledge and experience, which could adversely affect creative output (Guimera et al. 2005, Choi and Thompson 2005, Skilton and Dooley 2010).

While both the influx of newcomers and team familiarity independently may influence innovative performance, the interplay between these two factors remains largely unexplored (Musket et.al, 2022). Theoretical considerations often isolate these factors, overlooking the dynamic relationship that might exist between them.

Newcomers can introduce fresh perspectives and novel ideas, thereby potentially boosting innovation. Simultaneously, the introduction of fresh newcomers disrupts existing team familiarity, which might negatively impact team dynamics and coordination, and, consequently, innovative performance. On the other hand, while team familiarity can enhance communication efficiency and coordination, too much familiarity may suppress innovative thinking by promoting homogeneity and groupthink (Janis, 1972).

By building on existing theories and findings, the study developed hypotheses to examine how the rate of newcomers with differing levels of team familiarity impact fostering innovation within teams. The empirical setting for testing this framework is MobyGames's Video Game Sequels database enabling us to trace shifts in team composition over time. By unveiling the conditions under which newcomers can enhance or hinder team performance, this study offers both theoretical insights and practical implications for effective team management in various contexts.

Research Aim and Question

In order to contribute to the existing research on team innovative performance, the research question aims to determine the extent to which newcomers influence innovative performance and the role team familiarity plays in moderating this relationship.

The Debate Regarding Team Composition and Innovative Performance

Some researchers argue that new members benefit team innovation and performance, while others contend that membership change can disrupt coordination routines and impede the team's adaptation to new task demands. Argote et al. (2014) challenge the belief that membership change is invariably beneficial for high-performing teams and propose that it hampers team performance. Lewis et al. (2007) find that high-performing teams are less adaptable to the disruption caused by departing members and less effective at integrating newcomers, leading to coordination problems. In their research on transactive memory systems, they found that partially intact groups depended on previously established Transactive Memory Systems (TMS). However, this dependence led to less efficient TMS processes and, consequently, lower group performance during an assembly task. In comparison to intact groups, these partially intact groups had noticeably less efficient TMS processes and performed significantly worse, even when compared to newly formed groups (Lewis et al., 2007).

Also, Gruenfeld et al. (2000) suggest that high-performing teams are more likely to adhere to existing routines and resist adaptation, resulting in coordination problems. Their study uncovered the nuanced impact of shifting team members on the transfer of knowledge between groups. Rather than facilitating a direct transfer of ideas from one group to another, the shifting of members manifested in different outcomes. Notably, when individuals moved to new groups, their ideas did not hold much power and were notably less employed compared to the ideas of the long-standing members (Gruenfeld et al., 2000). Consequently, integrating newcomers into high-performing teams can introduce friction and coordination challenges. Blanco-Fernández et al. (2022) further suggest that the dynamics of group adaptation, involving changes in team

composition, can influence performance outcomes. They argue that innovative coalitions dealing with complex decision-making problems should avoid changes in team composition.

On the other hand, while it may initially seem counterintuitive, conflict can be perceived as a catalyst for innovation, as explored in studies by Jehn (1995) and Pelled (1996). As demonstrated by Hülsheger et al. (2009), the concept of conflict as a research subject has roots in Deutsch's early 1973 work on cooperation and competition. Over time, as the understanding of conflict evolved, researchers such as Jehn (1995) began to draw a distinction between task-related conflicts and relationship conflicts. Task conflict involves differences in perceptions, concepts, and opinions among team members regarding their work tasks. Surprisingly, this form of conflict can spur innovation. Such disagreements promote the exchange of information, deep examination of contrary views, reassessment of established norms, and rigorous scrutiny of the task. These activities lead to the generation of novel ideas and solutions and enhance problem-solving abilities, as noted by Shalley & Gilson (2004), Tjosvold (1985), and West (2002).

In parallel, Bledow et al. (2009) have made a compelling argument that innovation is inherently tied to conflict, and its effective management can lead to more significant workplace innovation. Evidence supporting this theory also comes from social-psychological studies on decision-making, illustrating that disagreements result in increased consideration of unique group information, thereby improving decision quality (Brodbeck et al., 2002). Furthermore, the idea of minority dissent (in the case of this research: the disagreement caused by newcomers to the existing corporate culture) is seen to reduce group conformity and consensus-seeking, stimulate cognitive complexity, promote divergent thinking, and thus foster innovation (De Dreu & West, 2001). And lastly, the findings of Choi and Thompson (2005) demonstrated that the innovative contribution of newcomers, quantified by their creative idea generation, had a

beneficial effect on the groups. Furthermore, it was observed that the introduction of highly productive newcomers boosted the creative capacity of the 'oldtimers'.

Hypothesis 1

Expanding on the ongoing discussion, there is a clear dichotomy. One school of thought maintains that minimal changes in team composition result in superior performance. This argument asserts that maintaining a stable team composition is believed to reduce conflicts, miscommunication, and disruptions, thereby enhancing performance. In contrast, the other side advocates for integrating new, diverse members who might not align with the current team composition. This perspective emphasizes that adding new members becomes a significant driver for bettering performance.

Taking into account these diverging viewpoints, we choose to align with the latter perspective that supports the infusion of newcomers. This stance is a challenge to the opposing view, but we believe it to be a worthwhile investigation. Hence, we hypothesize that there is a positive relationship between the influx of newcomers and the team's innovative performance, leading to significantly better outcomes. Given that newcomers may bring fresh perspectives and novel ideas to the team, it is plausible that they could contribute to significantly better outcomes in terms of innovative performance.

Hypothesis 1: The influx of newcomers contributes positively to Innovative Performance.

Team Familiarity and Innovative Performance

Team familiarity is fundamental in all aspects of team and organizational performance, productivity, and success (Muskat et al, 2022). Research demonstrates that teams working on routine, recurring, and standardized assignments usually operate within a context that exceptionally takes advantage of team familiarity. It is a fundamental driver of team

effectiveness and positively inspires team members' task and social aspects, often individually. Essentially, the increased familiarity among team members leads to the creation of high-quality task outputs. Hence, increased team familiarity is associated with error reduction, higher employee and customer safety, and rapid processes and procedures (Espinosa et al., 2007; Patterson et al., 2016; Doekhie et al., 2017). At the same time, Rosen (2023) discusses the positive impact of team member familiarity on teamwork and interprofessional collaboration, suggesting the importance of fostering team member familiarity in organizational design as higher cognition among team members enhances their job productivity and enables them to communicate better when they are highly conscious of each other.

Moreover, research shows that a high team familiarity level significantly improves leaving abilities, faster learning within entrepreneurial teams, efficient social learning, and improved creativity and creative performance in organizational tasks. Besides, higher team cognition advances team adaptiveness to the work environment and increases the assimilation of new members into the team (Muskat et al., 2022). Sometimes, the team members might be involved in a task requiring high-level coordination (Huckman et al., 2009). In such moments, increased familiarity would help members coordinate their activities. Technology transfer literature suggests that transferring information and knowledge between two people is usually an increasingly social and costly process. Longer and repeated with one another may offer a way of unlocking some of the fundamental but challenging to share and transfer knowledge with solutions also becoming challenging to find.

Additionally, shared experiences among team members might make them develop team human capital or network-precise human capital that boosts performance. Huckman et al. (2009) note that literature on transactive memory also brings to the fore the argument of coordination as

a leading factor of team familiarity that impacts member performances. Specifically, the transaction memory system that entails knowledge coordination and accurate representation of knowledgeable employees positively affects team and organizational performance. The idea of the awareness of the residence of team members might be useful if positions within the team are not predefined and judgment is deployed in assigning people tasks (Huckman et al., 2009). Familiarity also improves employee willingness to engage in team activities and organizational tasks. For example, team beliefs, particularly psychological safety, can affect learning and performance, especially when members are increasingly uncomfortable taking huge risks. Huckman et al. (2009) contend that team familiarity can improve psychological safety among members, with a feeling of organizational safety fundamental in improving organizational performance. According to research, increased familiarity in the team can result in high trust levels, which increases the volume and quality of information shared between members. Similarly, teams with high familiarity usually operate best under pressure, with amplified stress levels, while completing time-sensitive and high-risk jobs (Muskat et al.,2022).

On the other hand, the current research has shown that most studies about team familiarity have focused on high routine, high-risk, and standardized work environments (Muskat et al., 2022). This leaves out a detailed understanding of the procedures and results of increased team familiarity in non-routine and non-standardized contexts, especially in creative, innovative, and ambiguous work settings. This study attempts to tackle this gap by focusing on these work settings to understand the impact of team familiarity on innovative performance. Some authors addressed this matter, such as Xie et al. (2020), who discovered an inverted U-shaped relationship between team familiarity and team innovation, indicating that moderately familiar teams exhibit the highest innovative performance. Also, Muskat et al. (2022) conducted

a systematic literature review on team familiarity, emphasizing its positive impact on performance outputs and team cognition while highlighting the need for a clearer understanding of time and potential counterproductive outcomes.

A potential drawback of teams with high familiarity, especially in innovative and creative tasks, could be a tendency toward groupthink. This means that team members are more likely to conform, leading to limited debate and a reluctance to question prevailing ideas and knowledge (Janis, 1972). In creative groups where team familiarity is high, this could result in fewer innovative concepts as the knowledge amongst team members becomes more uniform. Conversely, a greater diversity of ideas and fresh perspectives may emerge when creative teams have less familiarity (Guimera et al., 2005). Likewise, Cummings and Haas (2012) suggest that high team familiarity can lead to a tendency to adhere to existing routines and resist adaptation, limiting the team's ability to explore new ideas and approaches.

Hypothesis 2 and 3

Based on these existing studies, there's a shared understanding among researchers that team familiarity boosts team performance, especially in highly routine and structured environments. However, the influence of team familiarity on innovation remains less definitive, with arguments presenting divergent views.

On one hand, some scholars posit that high team familiarity always correlates with increased team performance. They assert that shared experiences, common understandings, and established communication pathways facilitate smoother operations, therefore enhancing performance. When it comes to newcomers, several advantages arise from their pre-existing familiarity. For instance, it can streamline the process of newcomers' integration into the team, minimizing potential disruptions often linked with the introduction of new team members. In

their article, Kane et al. (2015) argue that groups might be less inclined to impose assimilation pressure on newcomers who demonstrate a proactive understanding of the group's identity during their initial interactions. Assimilation pressure refers to the pressure experienced by newcomers to conform to the established norms, values, behaviors, and identity of a group. In other words, the group is more likely to accept newcomers who show an understanding and appreciation for the group's identity from the start. This could help maintain the overall productivity and cohesiveness of the team during transitional periods (Kane et al., 2015). Moreover, the enhanced capacity for innovation can result from the synergy of diverse knowledge, supported by the trust and open communication that familiarity engenders. This environment can facilitate a more effective exchange and synthesis of ideas. With these advantages in mind, the influence of pre-existing familiarity that newcomers share with each other and with existing team members on the potential for innovative performance is increasingly prominent. Notably, when newcomers are versed in the workings, goals, and methodologies of the team, there is a remarkable improvement in team performance. This correlation indicates that a pre-existing comprehension of a team's processes can spur and nurture an atmosphere conducive to innovation, resulting in improved performance and more groundbreaking outputs.

Conversely, other scholars argue that while team familiarity may enhance general performance, it could potentially stifle innovation. They suggest that a highly familiar team might become entrenched in their ways, resisting new ideas and thereby potentially hampering innovative performance. Using this logic, we can infer that the infusion of newcomers with high familiarity will not disrupt team dynamics (in a positive or negative way) as these newcomers share similar views. As a result, the expected influx of fresh ideas might be lower, which may lead to less innovative performance.

Recognizing the validity of both perspectives, we propose two hypotheses that attempt to reconcile these differing views and provide a better understanding of the role of newcomer familiarity in contributing to innovative performance. Hence, we introduce newcomer familiarity as both a direct contributor and a moderator to innovative performance.

Hypothesis 2: Newcomer Familiarity contributes positively to Innovative Performance.

Hypothesis 3: Newcomer Familiarity moderates the relationship between Newcomer Rate and Innovative Performance.

Research Method

Establishing the hypotheses relating to newcomers, team familiarity, and their impact on team innovation and performance facilitates the determination of the research methodology used to test them. The next section provides an overview of the research design, data collection procedures, and analytical techniques using an empirical case study design.

This research is designed as a case study focused on the video game development industry, utilizing the rich and comprehensive data available in the MobyGames database. The MobyGames database, widely recognized as an internet repository with meticulous cataloging of video game information, will serve as the primary data source for this study (Mollick, 2012). Its extensive documentation provides comprehensive information on game development teams and their successive projects, which is an ideal repertoire for this research. Furthermore, the database allows filtering games based on whether they are sequels, enabling the examination of team membership changes over time. Hence, using data from game sequels serves as a crucial resource to trace shifts in team composition over time. Through this longitudinal tracking, we can observe how the introduction of newcomers across different sequel projects (i.e., their rate of integration and their level of familiarity with existing team members) affects the trajectory of innovative performance across a series of projects.

Data Collection and Variables for the Study

We assembled our dataset by employing a web-scraper on www.mobygames.com, and then manually revised it to ensure thoroughness and correctness. The data collection process focused on the period between 1978 and 2002, allowing for a mixed-effects analysis of entrepreneurial teams within the video game industry. The reason for adopting this analysis is due to the grouping (or nesting) nature of the sequels (i.e., belonging to the same family of video games). After filtering the data which have missing values, the total number of observations became 745 (the original number of observations was 1,333).

Dependent Variable: Our study's dependent variable is the innovative performance of the team. We used expert evaluations from the MobyGames database to determine this. These evaluations include reviews and ratings from a multitude of professional critics, ranked on a scale of 0 to 100, with 100 being the best. It's important to note that the quality, precision, and consistency of these evaluations can differ widely. As a result, a weighted average is calculated for each critic based on their past accuracy, consistency, and track record. According to MobyGames, critics with a high degree of accuracy, consistency, and credibility have their scores weighted more in the MobyRank calculation. A game must have a minimum of six reviews to have its critic scores recorded in the database.

Independent Variables: The primary independent variable in our study is the influx of newcomers (i.e., newcomer rate). This was measured as the ratio of incoming members to the total number of incoming, outgoing, and remaining members. We used this method to more accurately depict the total membership fluctuation in teams with varying member turnover rates. The second independent variable is the team familiarity of newcomers (i.e., newcomer familiarity). In our study, we quantified the team familiarity of newcomers based on their prior

working experience with existing members of the current team. This was gauged by computing the average of all the newcomers' familiarity with members of their current team.

Control Variables: To provide a comprehensive analysis and to consider possible confounding factors, we incorporated several control variables, spanning aspects related to team, game, industry, and firm. Firstly, we accounted for the average quality of new members (i.e., average newcomer quality), a crucial element known to impact the effect of team membership change on team performance (Bunderson, Van der Vegt, & Sparrowe, 2013; Chen, 2005; Summers et al., 2012). We gauged the quality of incoming members based on their historical average performance in all prior video game development projects they were part of.

Secondly, we considered team characteristics. We included team size as a variable, acknowledging that larger teams necessitate more coordination and its potential influence on innovation (Anderson & King, 1993; Kimberly & Evanisko, 1981; Payne, 1990, Hülsheger et al., 2009). We also took into account team tenure, as longer-serving teams tend to develop streamlined thinking and efficient routines (Katz's, 1982; Hülsheger et al., 2009). We measured team tenure by the number of prior sequels a given team has produced. Furthermore, we incorporated teams' genre diversity (Harrison & Klein, 2007), understanding that teams with a wider range of experience are more likely to adjust to evolving situations, a vital aspect in a dynamic industry like video gaming.

Thirdly, we introduced control variables related to the game itself. We considered the game genre, such as Action, Adventure, Racing/Driving, Roleplaying, Simulation, Sports, and Strategy, acknowledging that different genres appeal to different audiences and have varied expectations for novelty and quality. We also controlled for media exposure, recognizing that games with extensive media coverage could influence the perception of game quality by industry

experts. Media exposure is measured by tallying the number of critic's reviews each game received.

Fourthly, we included a control unrelated to the specific game but rather to its competitive environment. Given that games vie for market share, we factored in competition by calculating the total number of video games launched in the entire market during the release period of the game in focus.

Lastly, we deemed it essential to consider the historical performance of the video game development team. To capture this, we employed the performance of the team's preceding sequel as a measure of their past performance. A team's prior performance can be a significant predictor of their current work, given that it reflects their proven abilities, trends, and working patterns (Nixon, H. 1977; Gabelica et al., 2014). For instance, a team that has delivered a successful project in the past is likely to replicate or even surpass its performance, drawing on its successful strategies and learnings. Conversely, a team with a less successful past might encounter more hurdles in achieving superior performance. By integrating this factor, we aim to understand the influence of past triumphs or setbacks on the team's current performance.

Analytical Approach

In our exploration of the varying levels of innovation within the video game industry, we employed a mixed-effects model for our analysis, deeming it an appropriate method for our research. Mixed-effects models, often referred to as hierarchical or multilevel models, are utilized to scrutinize data with nested or hierarchical structures. These models enable us to categorize observations into higher-level units, a concept well-defined by Bliese (2013). It allows for the incorporation of both fixed effects (factors that are of primary interest) and random effects (factors that represent variability between groups) in the same model. By taking into

account the correlation and heterogeneity within and between groups, mixed-effects modeling provides more accurate and reliable estimates of the fixed effects, effectively managing the intricate dependencies inherent in the data. Fixed effects are those elements that have a consistent influence on innovation across the sequels of video games. These include individual team characteristics such as the rate of new team members, the size of the team, and team tenure. On the other hand, random effects will focus on the varying aspects of the sequel family membership of these video games. This is vital to correct for intercept variance (unobserved heterogeneity) of this family grouping.

Two distinct models were developed, each with different variables:

Model 1: This model serves as the fundamental structure in our framework, taking into account only the variables pinpointed in our research without the interaction term. This basic model offers a streamlined perspective of the study, enabling us to analyze the direct effects of these key variables without the confounding influence of the interaction term.

Model 2: Building on Model 1, this model introduces the interaction term between the rate of newcomers and their level of familiarity. It assesses whether the dynamic between these two variables might affect the overall performance of the team. This provides valuable insights into how the rate at which newcomers are introduced and their pre-existing familiarity with the team influences innovative performance.

Results

The software used to conduct the analysis is Stata. The data has been verified for multicollinearity (table 2), and the residuals have been robust, both of which do not violate the regression principles. Descriptive statistics and Pearson correlations of the variables have been conducted (Tables 1 and 3). Based on the regression (table 2), in Model 1, both the rate of

newcomers and their level of familiarity within the organization appeared statistically insignificant. This suggested that each of these factors, when considered separately, did not seem to have a measurable impact on innovative performance.

However, the scenario changed with the introduction of an interaction term in Model 2, reflecting the combined influence of the newcomers' rate and their familiarity. The newcomer rate emerged as a significant factor in Model 2 ($\beta = 11.08$, s.e. = 3.32, $p < 0.01$), indicating a positive correlation between the influx of new members and an increase in innovation. Additionally, the quality of these newcomers proved to be crucial. In both models, the results confirmed that the quality of newcomers significantly impacts a team's innovative performance ($\beta = 0.20$, s.e. = 0.069, $p < 0.01$ in model, and $\beta = 0.19$, s.e. = 0.07, $p < 0.01$ in model 2). These insights suggest that while an increased rate of newcomers can stimulate the innovative environment, the quality of these newcomers has a substantial influence on the direction of innovation.

Model 2 also underscored the importance of team familiarity. Aligning with the belief that team familiarity of newcomers facilitates seamless communication and comprehension, it was indeed identified as a positive direct contributor to innovative performance ($\beta = 1.77$, s.e. = 0.48, $p < 0.01$). This impact was not evident in Model 1, further highlighting the significant combined effect of these factors when they interact.

The fascinating aspect of this research lies in the observation that both the newcomer rate and their familiarity, which initially seemed statistically insignificant in Model 1, turned out to be significant when their interaction term was introduced in Model 2. The negative and statistically significant moderator in Model 2 ($\beta = -2.30$, s.e. = 0.67, $p < 0.01$) indicates that high familiarity

can potentially lead to lower innovative performance. Thus, the interaction of these factors reveals a more complex narrative about team dynamics.

We have charted an intriguing interaction between the rate of newcomers and their familiarity and how it impacts innovative performance. When the newcomer rate is low, those possessing a high level of familiarity (+1Std.Dev.), tend to significantly enhance innovative performance. Their well-grounded knowledge seems to facilitate innovation effectively within the established framework of the organization.

Interestingly, the dynamic changes as the organization witnesses a surge in the rate of newcomers. Newcomers with low familiarity (-1 Std.Dev.) start to take the lead in contributing to innovative performance. Their fresh perspectives, enriched by diverse backgrounds, seem to stimulate innovation. They are perhaps less constrained by established norms and preconceptions, which allows for a broader range of creative thinking.

This complex relationship is visually represented in our graphs. In Figure 2, the green line demonstrates the negative correlation between high familiarity and innovative performance as the newcomer rate rises. It indicates a decline in innovative contributions from those with higher familiarity in the face of an increased rate of newcomers Moreover, the red line in the same figure, representing the newcomer rate with low familiarity, displays a positive slope with the increasing rate. It suggests that as the rate of newcomers increases, those with low familiarity tend to have a more positive impact on innovative performance. The base case, shown in the graph, exhibits little variation in innovative performance. This lack of clear directionality is in alignment with the conflicting views in the literature on this topic. This is further evidenced by Model 1, which excluded the interaction term, displaying the statistical insignificance of the newcomer rate. Further, the Johnson-Neyman plot in Figure 3 re-emphasizes these findings. It

shows a downward trajectory of the newcomer rate when coupled with newcomer familiarity, providing additional evidence of this inverse relationship.

Overall, these graphs reveal an intriguing interplay between the newcomer rate and their familiarity level. For lower rates of newcomers, those with higher familiarity can be more beneficial for innovative performance. Conversely, in situations with a high influx of newcomers, those with lower familiarity could foster a more innovative environment. Nonetheless, other factors need to be examined when interpreting these findings and developing strategies based on them.

For instance, team size was found to be a positive contributor to innovative performance for model 1 ($\beta = 0.017$, s.e. = 0.0069, $p < 0.05$), and model 2 ($\beta = 0.0172$, s.e. = 0.0068, $p < 0.05$). As established by Hülsheger et al. (2009), the brainstorming literature provides compelling evidence that an increase in group size correlates positively with both the quantity and quality of creative ideas (Bouchard & Hare, 1970; Gallupe et al., 1992). Furthermore, various studies have highlighted a positive correlation between the size of an organization and its innovative capabilities (Anderson & King, 1993; Kimberly & Evanisko, 1981; Payne, 1990). Expanding upon these findings, and as the results of this study showed, we prove the idea that this positive relationship demonstrates that with a greater diversity of skills, viewpoints, and perspectives, larger teams are uniquely poised to foster innovation. The reasoning behind this assertion is that larger teams offer a wide spectrum of resources, talents, and knowledge. These attributes are critical in tackling complex, ill-defined tasks such as the conception and execution of innovative ideas. As highlighted by Stewart (2006), these larger teams are particularly advantageous when addressing demanding assignments in uncertain, complex contexts.

The results also indicate that team tenure has a negative effect on performance in models 1 ($\beta = -0.53$, s.e. = 0.17, $p < 0.01$) and 2 ($\beta = -0.55$, s.e. = 0.17, $p < 0.01$). Over time, these teams may develop predictable routines and thought patterns, which may inhibit creativity and innovative thought. This confirms that high team tenure may inhibit the vitality and new perspectives required for optimal team performance. Hülsheger et al. (2009) explain through Katz's (1982) research that as team tenure lengthens, there's a tendency for members to become more inward-looking, distancing themselves from external influences. His study, which used a sample of R&D project teams, found that with increased tenure, teams engaged in less communication with experts outside their immediate project group or organization. However, these external interactions play a critical role in fostering innovation, as they infuse teams with fresh information and inspiring triggers. Long-standing teams, on the other hand, often develop established work routines and structures they are hesitant to alter, as these confer a sense of stability.

As for the genre of the games, it turned out that only games under the category of racing and simulation showcased the need to be constantly creative, benefiting majorly from the innovative output of the development teams. The constant evolution and success of these categories are, thus, inextricably linked to the innovative prowess of the developers, demonstrating how crucial creativity is in maintaining player engagement and pushing the boundaries of the gaming experience. Additionally, teams with more media exposure demonstrated a higher potential for contribution to innovative performance both in model 1 ($\beta = 0.17$, s.e.= 0.02, $p < 0.01$) and 2 ($\beta = 0.17$, s.e.= 0.019, $p < 0.01$). This validates the assumption that extensive media coverage affects the perceived quality of the game by industry experts.

Remarkably, it is revealed that teams with a history of project achievement contributed positively to innovative performance in model 1 ($\beta = 0.42$, s.e. = 0.046, $p < 0.01$) and model 2 ($\beta = 0.43$, s.e. = 0.046, $p < 0.01$). It appears that success breeds success, as past accomplishments can strengthen team confidence, inspire risk-taking, and nurture an environment of ongoing refinement and creativity (Flaig et. al, 1994).

Additionally, there is statistical significance of team genre diversity in both model 1 ($\beta = 3.03$, s.e. = 1.46, $p < 0.05$) and model 2 ($\beta = 3.06$, s.e. = 1.43, $p < 0.05$). Team genre diversity fosters a rich convergence of ideas and perspectives from diverse disciplines or fields, which can stimulate innovation and enhance problem-solving strategies (Garcia et al., 2007; Harrison & Klein, 2007). Similarly, competition within the same game genre generates a sense of urgency and a desire for excellence, motivating members to aspire for superior performance (Brouwer et al., 2010). Only by incorporating the interaction term into model 2, the statistical significance of competition is amplified ($\beta = 0.0063$, s.e. = 0.0037, $p < 0.1$).

Based on these results, hypotheses 1 and 2 were only verified and validated in model 2, where the interaction has been incorporated, forming a solid foundation for us to proceed and navigate the implications they present.

Discussion

This research sheds light on the crucial role team familiarity plays with regard to integrating newcomers into a team to enhance innovative performance. The inclusion of newcomers, with their fresh perspectives and diverse skill sets, fuels a surge of creativity and innovation within the team. This observation confirms previous studies suggesting that an infusion of new ideas often sparks innovation by disrupting established cognitive structures and workflows (Hülsheger et al. 2009; Shalley & Gilson 2004, Tjosvold 1985, and West 2002;

Brodbeck et al., 2002; De Dreu & West, 2001). In addition to this, newcomer familiarity was found to positively impact innovative performance. Essentially, when newcomers have a thorough understanding of the team's operations, the team's output benefits (Espinosa et al., 2007; Huckman et al., 2009; Patterson et al., 2016; Doekhie et al., 2017; Muskat et al., 2022; Rose,2023). However, these results were only validated when the interaction between the newcomer rate and familiarity was incorporated into the model. Without this interplay, the findings were subjected to mixed results, which warranted additional scrutiny. Hence, this study illuminates the less-explored downside of team familiarity, suggesting that it could potentially lead to creative stagnation. This assertion challenges a well-established notion that always links high team familiarity with superior performance.

Upon examining the interplay between newcomer rate and newcomer familiarity on innovative performance, insightful patterns emerge. With a low influx of newcomers, those with high team familiarity contribute more to innovative performance compared to those with average and low team familiarity. Yet, as the newcomer influx increases, the narrative changes, suggesting potential challenges that a team could encounter when its composition is dominated by newcomers who are already familiar with the team. This could disrupt existing team dynamics, encourage risk avoidance due to existing relationships, or stifle novel ideas, as newcomers with high familiarity might adhere more closely to established norms and processes. These findings are in alignment with the argument by (Janis, 1972; Guimera et al., 2005; Katz, 1982; Muskat et al., 2022), who posit that too much familiarity might breed a comfort zone that curbs creativity and innovation. Concurrently, West & Anderson (1996) put forth the idea that mature teams might experience a dip in innovation due to an increased susceptibility to groupthink, homogeneity, and a decreased propensity to critique and challenge the status quo.

This effect is compounded by socialization processes and shared experiences, leading team members to adopt more similar viewpoints over time (Katz, 1982; West & Anderson, 1996).

Expanding on our findings, it is shown that as the rate of newcomers increases, there is a corresponding positive trend in the case of low team familiarity. This signifies that a higher influx of newcomers with less familiarity can better drive innovative performance. These newcomers introduce diverse viewpoints, challenge the status quo, and stir creativity, thereby fostering an environment conducive to innovation (Hülsheger et al., 2009; De Dreu & West, 2001, Shalley & Gilson, 2004; Tjosvold, 1985; West, 2002; Bledow et al., 2009).

In an intriguing revelation, the baseline scenario where the influx of newcomers with average familiarity remains consistent does not yield a significant impact on innovative performance. This observation echoes the ongoing debate in the literature about the influence of changes in team composition on innovative performance. This was affirmed in Model 1 of our analysis, where both the newcomer rate and newcomer familiarity did not exhibit statistical significance on their own. This implies that these isolated factors may not independently steer innovation in a significant manner, which would invalidate both hypotheses 1 and 2 of this study. However, the interaction term between these two variables proved to be critical. This key finding indicates that it is not merely the independent presence or intensity of these factors that matters, but rather their interplay. It is the combined effect of the influx of newcomers and their degree of familiarity with the team, and how these factors interact, that truly shapes the landscape of innovative performance.

This interplay is consistent with Koryak et al.'s (2018) findings, which point out the challenges of balancing Exploration (future viability) and Exploitation (current viability) in a team setup. It appears that managing team composition to nurture innovation requires a delicate

balance. Teams benefit from a combination of both familiar and unfamiliar newcomers, and understanding how these populations interact and evolve over time is critical. In some instances, stability and familiarity bring necessary order to the chaos of innovation, while in others, new, unfamiliar perspectives act as the ignition for creativity and disruption. These findings offer nuanced insights into the drivers of innovative performance and potentially complement Ching et al.'s (2020) findings in the sense that an influx of newcomers with low familiarity could mitigate the risk of declining innovative potential associated with the increased familiarity (right-hand side of the inverted U curve).

In light of the above, these findings underline the complexity of managing team composition for innovative outcomes. The task is not just about monitoring the number of newcomers or gauging their familiarity levels, but about understanding the intricate dynamics that arise from their interaction. By acknowledging this interaction as a significant determinant of innovation, teams can better strategize their composition for optimal innovative performance. The overarching goal is to provide some answers to prevailing concerns in the literature and to offer insights and guidance to new ventures seeking to cultivate innovation, assisting them in their thriving quest toward success.

Managerial Implications:

While the research may have been conducted on a non-routine, non-standardized industry like video game development, the principles of balancing newcomer rate and familiarity can be applicable to a wide range of ventures operating in innovation-driven domains.

In dynamic, innovation-intensive industries, understanding the balance between newcomer rate and familiarity is valuable. Organizations must strategize their hiring in a way that supports their operational needs and innovation goals. This is not just about hiring the most

qualified candidates, but also considering the potential impact of these individuals on the team's dynamics and overall innovation output.

When an organization operates in an environment where the hiring influx is low, it can afford to prioritize familiarity. Familiar individuals are able to quickly integrate into existing workflows, and, therefore, contribute effectively to the team's innovative performance in a shorter timeframe. Conversely, when the hiring influx is high, with many newcomers joining in a short time span, prioritizing low familiarity can yield advantages. This diversity can stimulate creativity and breed innovation, as it introduces fresh viewpoints that challenge the status quo and encourage out-of-the-box thinking.

However, it is crucial for organizations to manage this balance carefully. Too much familiarity might lead to groupthink and stifle creativity, while too much unfamiliarity might cause friction and miscommunication, and slow down the process of innovation. Ultimately, these findings emphasize the importance of strategic hiring and diversity in boosting innovation within teams. As the venture grows, it may be beneficial to keep adjusting the balance between familiarity and newcomer rate, maintaining the right mix to fuel continual innovation.

Limitations and Advancing Future Research

The use of historical data (1978-2002) in our study may present limitations, particularly due to the substantial advancements and changes within the video game industry post-2002. These changes encompass technological progressions, diversification of gamer demographics, and alterations in the industry's economic and regulatory environment. All these factors may have significantly influenced team interactions, performance, and the dynamics of team familiarity. The older dataset might not adequately capture these current realities, thereby potentially limiting the applicability of our findings to the modern gaming landscape. Therefore,

it underscores the necessity for further research using more recent data to confirm and extend our insights.

Building on the considerations surrounding the temporal constraints of our data, it becomes particularly intriguing to delve into more recent studies that cater to the altered dynamics in teams. Notably, Ching et al.'s research (2022) brings a fresh perspective to the concept of team familiarity by branching it into two unique components: competitive and collaborative familiarity. The study emphasizes the superior impact of competitive familiarity on team performance, showcasing that fostering a competitive environment within a team can be significantly beneficial, as observed in the eSports industry. Teams formed from past competitors, as a result, were more effective compared to teams built on previous collaborative interactions. The research further links competitive familiarity with idea convergence and divergence within an organization. This connection suggests that a healthy level of competition among team members is key for promoting collaboration, performance and even stimulating innovation and creativity. It is also linked to the promotion of collaboration, innovation, creativity, independence, and autonomy among employees. However, the study acknowledges the need for further exploration into the impact of competitive familiarity on team and organizational performance. Thus, a deeper understanding of team familiarity could provide crucial insights into optimizing team dynamics, creativity, and productivity and enhance dialogue, mutual understanding, inventive brainstorming, and decision-making processes within teams.

Conclusion

Overall, team familiarity is a fundamental concept that Human Resource Management must understand to allow them to design effective strategies to improve organizational

performance (Muskat et al., 2022). Previous research has revealed that team familiarity enormously benefits the organization, including improving company performance through advanced planning, decision-making, and behavior. However, team familiarity isn't always conducive to innovation. With increased familiarity, there's a risk of teams falling into patterns of repetition and becoming entrenched in their ways, thereby stifling original thinking, and hindering the innovation process. To counteract this, the strategic influx of newcomers with low team familiarity can be beneficial. These new members can disrupt these tendencies towards stagnation, injecting fresh perspectives and novel ideas into the team dynamic. They can question established norms, challenge the status quo, and stimulate the team to think outside of the box. This disruption, while potentially uncomfortable in the short term, can stimulate the team to adapt and evolve, thereby fostering a more dynamic and innovative environment.

Appendix

Figure 1: Graphical Representation of the Study

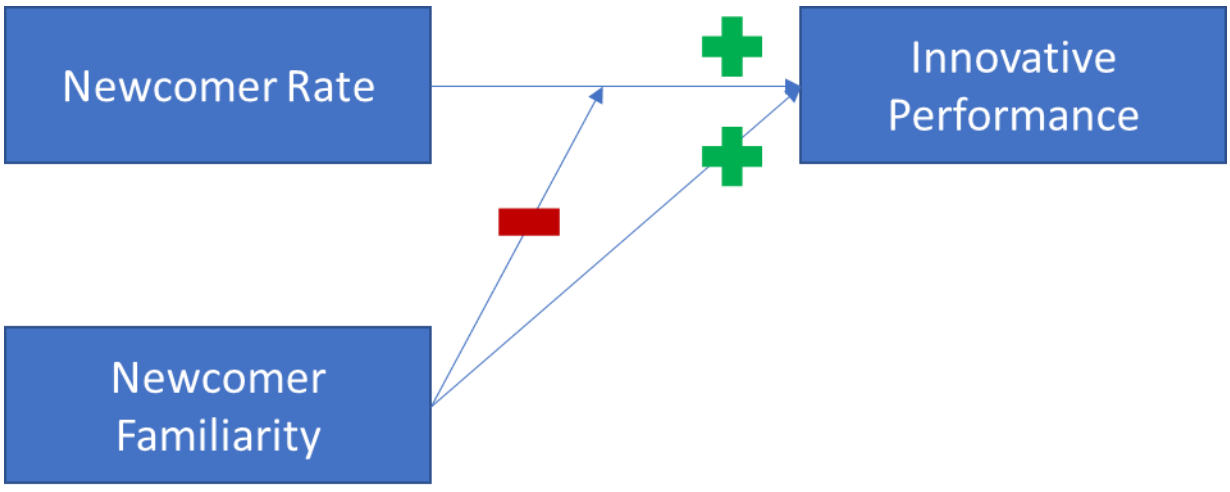


Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
Innovative Performance	76.86443	10.47291	32	97
NewcomerRate	0.7018225	0.2109132	0.408163	1
NewcomerFamiliarity	4.883059	1.8531	0	7.83333
AverageNewcomerQuality	74.97935	6.796231	33	92.38462
TeamSize	52.8698	39.03897	4	348
TeamTenure	3.291275	1.905634	2	14
TeamGenreDiversity	0.6229182	0.217279	0.1975309	1
Competition	805.8456	78.56282	597	967
MediaExposure	19.94362	15.79887	1	131
PriorPerformance	78.57987	9.320568	35	97

Table 2: Test for multicollinearity

Variable	VIF	1/VIF
PriorPerfo~e	**1.32**	**0.756487**
AverageNew~y	**1.25**	**0.797029**
TeamSize	**1.22**	**0.817677**
MediaExpos~e	**1.19**	**0.842956**
TeamTenure	**1.11**	**0.899315**
NewcomerFa~y	**1.07**	**0.937982**
TeamGenreD~y	**1.06**	**0.939324**
NewcomerRate	**1.06**	**0.947019**
Competition	**1.03**	**0.970003**
Mean VIF	**1.15**	

Table 3: Pearson Correlations Across Variables

	Newcom~e	Newcom..	Averag~y	TeamSize	TeamTe~e	TeamGe~y	Competn
NewcomerRate	1.0000						
NewcomerFa~y	0.0811	1.0000					
	0.0269						
AverageNew~y	0.0252	0.0473	1.0000				
	0.4917	0.1976					
TeamSize	0.0698	0.0141	0.1893	1.0000			
	0.0569	0.6998	0.0000				
TeamTenure	0.0529	-0.1901	0.0915	0.1997	1.0000		
	0.1495	0.0000	0.0124	0.0000			
TeamGenreD~y	0.1317	-0.0950	0.0972	0.1169	0.1157	1.0000	
	0.0003	0.0095	0.0080	0.0014	0.0016		
Competition	0.0838	0.0016	0.0239	-0.1059	-0.0263	0.0613	1.0000
	0.0221	0.9648	0.5147	0.0038	0.4735	0.0945	
MediaExpos~e	0.0251	-0.0325	0.1656	0.3273	0.0648	0.1201	-0.0858
	0.4942	0.3764	0.0000	0.0000	0.0772	0.0010	0.0191
PriorPerfo~e	-0.0969	-0.0133	0.4160	0.2187	-0.0340	0.0478	-0.0077
	0.0082	0.7174	0.0000	0.0000	0.3546	0.1927	0.8339

	MediaE~e	PriorP~e
MediaExpos~e	1.0000	
PriorPerfo~e	0.2622	1.0000
	0.0000	

Table 4: Multilevel Regression Results of Innovative Performance

	Innovative Performance	
	Model 1	**Model 2**
Independent variables	Estimate (Std. Error)	Estimate (Std. Error)
(Intercept)	18.72***(5.52)	10.89*(5.75)
Newcomer Rate	-0.17 (1.50)	11.08***(3.32)
Newcomer Familiarity	0.21 (1.7)	1.77***(0.48)
Newcomer Rate * Familiarity	-	-2.30***(0.67)
Average Newcomer Quality	0.20***(0.07)	0.19***(0.07)
Team size	0.017*(0.007)	0.017**(0.007)
Team tenure	-0.53***(0.17)	-0.55***(0.17)
Team genre diversity	3.06**(1.46)	3.07**(1.43)
Competition	0.006 (0.004)	0.0063*(0.0037)
Genre dummies	*Included*	*Included*
Media exposure	0.17***(0.020)	0.17***(0.019)
Prior Performance	0.42***(0.046)	0.43***(0.046)
Log Likelihood	-2619.38***	-2614.55***

$N = 745$.
* $p < 0.1$
** $p < .05$
*** $p < 0.01$

Figure 2: Interaction Plot

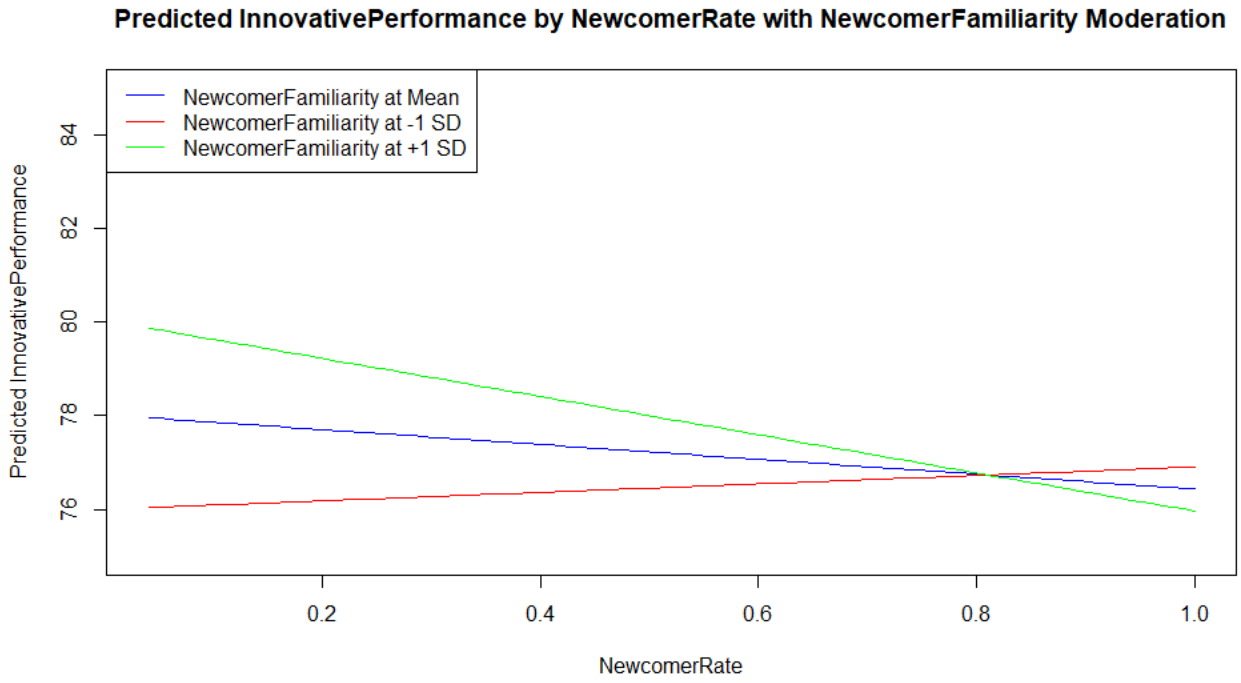
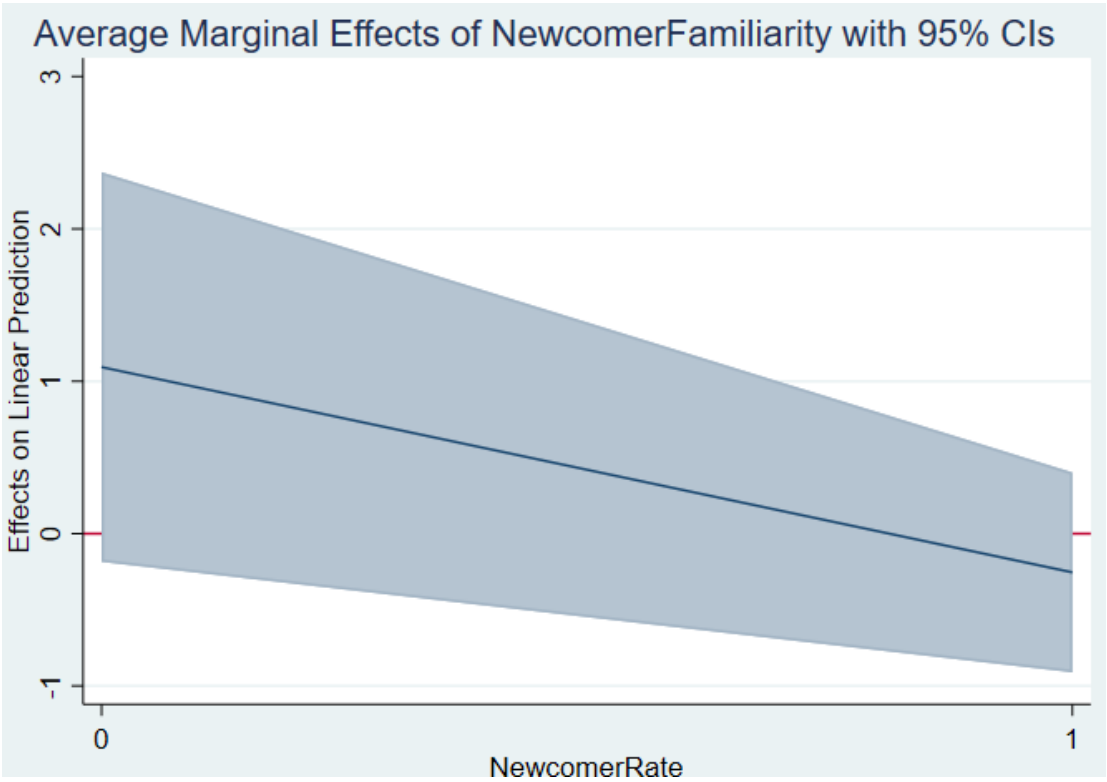


Figure 3: Johnson-Neyman Plot



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