“Why leaders are important for cross-functional teams: Moderating role of supportive leadership on knowledge hiding”

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Abstract

Knowledge exchange has been a critical factor for cross-functional teams to master different tasks and problems and promote innovation. Cross-functional teams rely on the direct cooperation of senior employees from different departments, often with converging aims, leadership, culture, and communication. However, with the ever-increasing complexity in business decisions, decision-makers invested in the manufacturing industry sector need the support of a diverse team as an advisory tool to put well-thought measures into effect. The aim of this study is to analyze how cross-functional teams in commerce and industry rely on different key performance indicators to limit knowledge hiding. This paper conducted a quantitative study of 130 individual participants working in cross-functional teams in Germany. It also adapted multiple linear regression and used a conceptual model impacting the relationship between team performance, trust, and organizational citizenship behavior, including the moderating role of leadership. The disruptive effect of knowledge hiding was contextualized. The results indicate that team performance is directly affected by the selected variables. Furthermore, it is limited to knowledge hiding, while trust and the use of adequate leadership help to retain knowledge retention. Lastly, organizational citizenship behavior was found as the paramount factor, supported by individually tailored leadership methods, to foster information exchange and thereby promote organization-wide learning.

Keywords
management support, information retention, trust, organizational citizenship behavior, team effectiveness

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INTRODUCTION

In recent years, there have been major crises that have shaken the world. The COVID-19 pandemic was one of the biggest crises in human history, with consequences that lasted for years (Ozili & Arun, 2020). Many businesses have gone through organizational crises due to having to reduce or reorganize to stay afloat during the epidemic (Malik, 2017; Ozili & Arun, 2020). In addition to these uncertainties, negative social factors developed, such as the disruption of cooperation between workers due to competition and knowledge hiding (König et al., 2020). Employees had to compete for shortened resources, take on more tasks, and often did not have the opportunity to complete them because they lacked the necessary information. Within this spiral, workers were insecure about themselves, lost trust in work colleagues and leadership, and meanwhile withheld their knowledge to secure a competitive advantage within the organization (Aarabi et al., 2013). Such an environment can distort perceptions between individuals, leading to negative consequences such as knowledge hiding.
Uncertain work environments of the last years due to the COVID-19 pandemic caused a cascading effect of an individualistic team approach. Rather than sharing competencies, many employees resorted to walling themselves off from corporate processes to preserve their valuable unique knowledge assets to avoid being replaced or fired. This trend hindered the successful work in cross-functional teams, as these teams are set together by individuals with different opinions, competencies, and personalities on purpose. Precisely this configuration, where individuals do not have a closer relationship with each other due to the temporary cross-functional composition, results in increased competition with each other. On the other hand, these interfaces enable unique investigations into organization-wide challenges and therefore take on a critical role in the study of knowledge hiding in cross-functional teams.

Creating cross-functional teams is one technique to bring organization units together for collaborative work and increase their competencies. A cross-functional team is a collection of persons with varying levels of experience who work together toward a shared objective to become more creative, inventive, and successful. Especially in groups where individuals from different areas work together temporarily, knowledge retention often occurs due to widely different ideas, mindsets, social skills, and general experience. Cross-functional teams fulfill the role of crossing the gap in projects requiring different sets of expertise, skills, and methodology to overcome barriers not solvable in traditional team environments. This study explicitly focuses on said group dynamics, focusing on the interdepartmental project management dimensions, where problem-solving is the critical parameter. The focus in terms of the content-related goals of cross-functional teams is not specified in more detail and is not essential. This means that cross-functional teams can be formed with the aim, for example, to improve the circular economy, to implement new IT software on specified processes, or to develop new products.

Ethical and supportive leadership is one effective method to unify contrast among group environments. However, little research has been conducted on how supportive leadership affects knowledge hiding when circumstances change, such as a pandemic. So far, moderating effects such as individuals’ perceptions of other team members, personality, and trust on the effects of knowledge-hiding behavior and supportive leadership have not yet been investigated.

Due to their nature, cross-functional teams rely on deeply entrenched project management environments. Looking at specific industries, the automotive industry offers an exceptionally high level of necessity for interdepartmental competence. Individuals from sourcing, logistics, production planning, sales, maintenance, and many more have to cooperate to form a successful value chain in the strategic planning of future automotive products. The input of every individual employee is critical in order to prevent mismanagement or business failure. As a result, only individuals active in this sector of the German manufacturing automotive industry were questioned to ensure the actual data representation.

1. LITERATURE REVIEW AND HYPOTHESES

To further understand how knowledge dictates the efficiency of company processes, it is vital to understand its attributes and limiting and promoting factors. In the literature, knowledge is categorized into explicit and tacit (Polanyi, 1962). The transfer of explicit knowledge is more accessible than that of tacit knowledge because the type of knowledge is limited (Hwang, 2012). In companies, tacit knowledge is predominantly held by employees and remains undocumented (Nguyen, 2021). Tacit knowledge is particularly important for companies to operate and manage efficiently and effectively (Maravilhas & Martins, 2019). Practically, however, employees tend to hide knowledge, leading to extra work and reduced work efficiency (Beijer et al., 2021). Therefore, it is imperative to prevent knowledge restitution. Connelly et al. (2012) distinguished between 3 types of knowledge retention.

Team effectiveness can be defined in different classes. For example, according to Piña et al. (2008), team effectiveness is classified into performance, attitudinal outcomes, and behavioral outcomes.
Connelly et al. (2012) point out that knowledge hiding does not happen because knowledge is missing but because it is intentionally concealed, which is requested by colleagues. Especially in cross-functional teams, i.e., groups where individuals from different areas work together temporarily, knowledge retention often takes place. Previous research found that abusive supervision (Feng & Wang, 2019) and job insecurity (Ali et al., 2021) contribute to knowledge hiding.

While attitudinal and behavioral outcomes reflect individual self-perception and subjective perceptions of management, such as satisfaction, commitment to the organization, trust, and confidence (Campion et al., 1993; Doolen et al., 2003), absenteeism and safety (Cohen et al., 1996), performance refers to the objective evaluation of the organization or the team. To assess team effectiveness, the third class, performance, is used within this study, which refers to the behavior of employees that contributes to the organization’s effectiveness (Singh, 2021).

First, knowledge hiding reduces the availability of knowledge to enable better performance (Xiao & Cooke, 2019). Employees who already hide knowledge tend not to seek support themselves because they fear that others will hide their knowledge (Xiao & Cooke, 2019). It is this process that leads to an increase in knowledge hiding and a decrease in performance within the team.

Knowledge hiding often hinders knowledge transfer within and between teams. This knowledge transfer process often aims to expand employees’ existing knowledge and optimize work performance by learning and combining knowledge (Wuryanti & Setiawan, 2017). In this context, antecedents for increasing performance through knowledge transfer do not have to be time intensive. Just directed task orientation and communication can already boost knowledge exchange in the short term (Ton & Hammerl, 2021).

On the other hand, hiding knowledge often reduces employees’ work performance for reasons such as lower decision-making capacity and problem-solving ability (Davenport et al., 2016). This spirals as employees cannot use the knowledge to generate new knowledge (Lee, 2016). Further, employees may document their tacit knowledge into explicit knowledge, which causes knowledge to be lost across organizations and lowers team effectiveness.

Threatening environments where employees are suspected of being stigmatized or discriminated against directly impact their knowledge-sharing strategies (Jahanzeb et al., 2019), often leading them to hide their knowledge to avoid criticism or harassment from colleagues (Arain et al., 2020).

Lanke (2018) found out that knowledge hiding by employees increases when interpersonal interactions are met with a lack of dignity and respect. Therefore, the relationship and atmosphere between employees are crucial as it has a lasting impact on collaboration and, thus, implicit knowledge sharing (Casimir et al., 2012).

A good relationship among employees, which includes respect, regular interactions, and trust, can promote sharing behavior among employees. However, especially in cross-functional teams, where employees have often not worked together before, this relationship is often challenging. Previous studies have found that competitive climates, on the other hand, increase knowledge concealment (Han et al., 2021).

It is known from several studies that the relationship among employees influences the hiding or sharing of knowledge. Semerci (2019) investigated the influence of tasks and relationship conflicts and found that both have a positive influence on knowledge hiding, and additional task conflicts lead to more robust competition. If team members feel connected to each other, the positive effects of teamwork increase. Relevant studies show positive correlations between commitment and performance, motivation, and attendance at work; negative correlations exist between commitment and stress, intention to leave the company, and actually leaving the company (Delgado Piña et al., 2008). It, therefore, stands to reason that interpersonal relationship commitment (OCB) also brings other team-building effects.

Results from previous literature further indicate that extraversion, neuroticism, and agreeableness negatively influence knowledge hiding, while con-
scientiousness shows a positive correlation. Similar results are also provided by Demirkasimoglu (2016), but extraversion is positively correlated with playing dumb, while neuroticism has a negative correlation. Further empirical studies are called for (Anand & Jain, 2014).

It is positive workplace behaviors that not only foster the aforementioned relationship among team members but also promote organizational functioning. From past literature, such behavior could be surveyed by the well-known Organizational Citizenship Behavior (OCB), characterized by five factors of altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Organ, 1994; Ocampo et al., 2018). These factors correlate with the personality traits, with conscientiousness even occurring identically in both.

So far, there has been no research on this aspect. In addition, especially in cross-functional teams, workplace behaviors play a more significant role, as prior characteristics of the employees in the team are not known. It is assumed that the desirable behaviors that lead to, among other things, organizational commitment, job satisfaction (Chiu & Chen, 2005), and job autonomy (Liguori et al., 2013), also have a positive influence on knowledge transmission or a negative influence on knowledge concealment within cross-functional teams.

Lastly, it is disputed that leadership can influence knowledge concealment or knowledge sharing behavior. In recent years, researchers have found that ethical leadership behavior leads to knowledge sharing (Koay & Lim, 2021). Transformational leadership behavior also influences knowledge reset (Ladan et al., 2017). Kim and Park (2020) found that transformational leadership not only has a direct positive impact on knowledge sharing but also on climate and organizational learning behaviors. As a moderator, transformational leadership has a negative impact on the influence between employee role conflict and knowledge reset (Nguyen et al., 2022).

In both ethical and transformational leadership behaviors, their employees’ mindsets are challenged, motivated, and inspired by keeping in mind high moral standards and values that guide their performance (Bass et al., 2003). Consequently, these leaders gain respect, trust, and admiration from their employees. In addition, both leadership behaviors are characterized by supportive and reciprocal communication. It is therefore hypothesized that the supportive aspects of leadership act as a moderator on OCB interaction, trustworthiness, interpersonal relationship commitment to team members, and knowledge concealment.

The aim of this study revolves around the analysis of factors in previous research that indicate a potential positive or negative link towards knowledge hiding, which is defined as the most limiting factor of team performance. Therefore, the following hypotheses are formulated:

**H1:** Knowledge hiding among employees in cross-functional teams is negatively associated with team effectiveness.

![Figure 1. Conceptual model](http://dx.doi.org/10.21511/ppm.20(3).2022.15)
H2: Trust in team members has a negative influence on knowledge hiding.

H3: Interpersonal relationship commitment to team members has a negative influence on knowledge hiding.

H4: Organizational citizenship behavior (OCB) has a negative influence on knowledge hiding.

H5: Supportive leadership moderates the impact of a) interpersonal relationship commitment to team members, b) trustworthiness to team members, and c) organizational citizenship behavior on knowledge hiding.

Figure 1 illustrates the conceptual model and associated hypotheses.

2. METHODS

This paper measures, through different scales, the different impact factors of individual perception that result in knowledge hiding, mainly interpersonal relationship commitment to team members, trustworthiness to team members, and organizational citizenship behavior. It further shows the moderating role of leadership support and the influence of knowledge hiding on team effectiveness.

Firstly, a classic short questionnaire for measuring commitment is the "Organizational Commitment Questionnaire – OCQ." Seven of the 15 items from Mowday et al. (1979) were used and adapted to survey the relationship of a cross-functional team to assess interpersonal relationship commitment.

Secondly, to measure leadership support, five out of eight items of the scale of Dai et al. (2013) to measure transformational leadership style were used and adapted to the current pandemic situation. Since transformational leadership is characterized by supportive leadership guided by trust, loyalty, and respect (Bass, 1995), the items of Dai et al. (2013) were optimal for assessing the perception of supportive leadership.

Thirdly, the inventory of Chiang and Hsieh (2012) was applied to measure the OCB. Items that predicted OCB were further described, particularly the trait factors of altruism, conscientiousness, and sportsmanship, courtesy, and civic virtue. They were originally assessed by Organ (1994). Other authors had similar results, assessing the items in helping behavior and voice behavior (Van Dyne & LePine, 1998) or OCB-O and OCB-I (Williams & Anderson, 1991). These items are also indisputably listed by other researchers as explanatory variables for OCB.

Fourthly, team effectiveness was also measured due to Chiang and Hsieh’s scale (2012). They initially used it for job performance in the tourism industry, but it is so generalized that it could also be adapted for cross-functional team effectiveness.

Lastly, the widely applied scales of Connelly et al. (2012) were chosen to measure knowledge hiding. The second-order construct of knowledge hiding subsumes three latent constructs: evasive hiding, playing dumb, and rationalized hiding.

All response options were measured on a bipolar, eleven-point rating scale, from 0 (strongly disagree) to +11 (strongly agree). The survey included only participants with previous experience in cross-functional teams focusing on interdepartmental project management. This survey was exclusively provided to individuals heavily invested in the German automotive industry.

Since Germany plays a dominant role in Europe, explicitly in Central Europe, in the research and development, production, and distribution of automotive vehicles, the focus was narrowed down to one country. Although more and more neighboring countries, especially the Czech Republic, Hungary, and Slovakia, are taking on a growing role in car production, conceptualization and design take place exclusively in Germany. Moreover, even in the case of cross-border cooperation, the center of project management and development, communication channels, and therefore also cross-functional teams remain in Germany for organizational and managerial reasons. Consequently, the answers were limited to German responses.

To empirically examine the model and test the hypotheses, respondents were asked to complete the structured questionnaire with 63 questions scaled metrically (see Appendix A). To collect the data, the survey was created on SoSciSurvey.com. Participants...
took the survey between January 1 and April 26, 2022. To consider the problem of common method bias because the data consisted of participants’ self-reports, the concepts of Podsakoff et al. (2003, 2012) were considered for the questionnaire design. The independent constructs were separated from the dependent ones so that the intent of the purpose of the study would not be apparent, to prevent bias in the results, and to ensure participant confidentiality. Items were additionally rotated within the study to avoid primacy and recency effects (Deese & Kaufman, 1957) and order bias (Blankenship, 1942). There was no time limit for answering the questions.

3. RESULTS

The sample consisted of a heterogeneous group. Surprisingly, the gender ratio indicated a high level of female participants. Additionally, many of the experts previously invested in cross-functional teams highlight an academic background, with more than half of the relevant survey respondents having a Bachelor’s degree or higher degrees. Lastly, it became evident that lately, many young professionals have joined the ranks of highly specialized experts in the automotive industry, allowing the transformation towards a more agile and flexible approach in favor of cross-functional teams. The descriptive data is provided in Table 1.

The hypotheses were tested using a series of linear regression analyses with Stata 14 (Table 2). All variables were standardized to mitigate multicollinearity. Additionally, collinearity diagnostics indicated that multicollinearity was not a significant issue (with tolerance indicators ranging from 0.53 to 0.87 and VIF scores ranging from 1.15 to 1.86).

Table 2 shows the regression analysis results with team effectiveness depending on knowledge hiding. The overall model is significant ($F = 43.79, p < .01$).

Table 1. Descriptive data

| Items           | Percentage |
|-----------------|------------|
| Gender          |            |
| Male            | 40.7       |
| Female          | 59.3       |
| Age             |            |
| < 21            | 1.2        |
| 21-30           | 71.9       |
| 31-40           | 20.5       |
| 41-50           | 3.9        |
| 51-60           | 1.2        |
| > 60            | 1.2        |
| Education background |     |
| Secondary school| 6.7        |
| High school     | 25.5       |
| Bachelor        | 49.7       |
| Master          | 16.8       |
| Ph.D.           | 1.3        |

Table 2. Linear regression

| Source          | SS     | df  | MS     | Number of obs | F(1,3) | = 130 |
|-----------------|--------|-----|--------|---------------|--------|-------|
| Model           | 186.527| 1   | 186.527| Prob > F      | < 0.01 | 43.79 |
| Residual        | 545.217| 128 | 4.259  | $R^2$         | = 0.2549 |       |
| Total           | 731.744| 129 | 5.672  | Root MSE      | = 2.0639 |       |

| Team Effectiveness | Coef  | Std. err. | T     | P > t     | 95% Conf. Interval |
|--------------------|-------|-----------|------|----------|--------------------|
| Knowledge Hiding   | -0.486| 0.073     | -6.62| < 0.01   | -0.632 to -0.341   |
| cons               | 7.869 | 0.565     | 13.93| < 0.01   | 6.751 to 8.987     |

Note: $n = 130$.
It explains a good part of the variance of the dependent variable \( R^2 = 0.2549 \). According to the regression analysis results, \( H_1 \) can be confirmed: With increasing knowledge hiding, team effectiveness decrease \( (r = -0.486, p < 0.01) \).

Regarding \( H_2-H_5 \), the control variables (gender, age, and education) were inserted in Model 1, followed by the independent variables (OCB, IRC, and Trust) and the moderator variable (Leadership support) in Model 2. Model 3 includes the interactions (OCB X leadership support; IRC X Leadership support; Trust X Leadership support) related to the outcome variable, knowledge hiding. Model 3 shows an improvement and significance in exploratory power, made visible in Table 3.

\( H_2 \) predicts that there is an association between IRC and knowledge hiding. The results in Model 2 indicate a positive effect, but it is not significant; therefore, \( H_2 \) is not supported.

Model 2 shows that trust is negatively and significantly associated with knowledge hiding \( (\beta = -0.25, p < 0.05) \), supporting \( H_3 \). OCB and knowledge hiding are significantly and negatively correlated, supporting \( H_4 \) \( (\beta = -1.04, p < 0.01) \).

The results in Model 3 include the interaction effects of IRC, trust, and OCB with leadership support. The interaction effect of leadership support on IRC and knowledge hiding is positive but not significant, thus rejecting \( H_5a \). Moreover, the interaction effects of leadership support on trust and knowledge hiding are very weakly negative correlated but not significant, rejecting \( H_5b \). Finally, the results indicate a consistent pattern of a positive and significant relationship between OCB and knowledge hiding moderated by leadership support \( (\beta = 0.1, p < 0.01) \), thus supporting \( H_5c \). The moderating effect of OCB is shown in Figure 2.

The simple slopes analysis revealed that the association between the OCB and knowledge hiding weakens significantly at high levels of leadership support. With low OCB (1-SD) and low leadership support, knowledge hiding is more prevalent than with higher leadership support. A slight reversal occurs with high OCB (1+SD). Knowledge hiding is slightly higher with high leadership support.

### 4. DISCUSSION

This paper has summarized the status of research regarding knowledge hiding and subsequently formulated different research hypotheses of correlating research areas. Firstly, its direct effects on the performance of team structures and possible limited knowledge exchange were highlighted. Secondly, the internal scope was further elaborated, focusing on specific key performance indicators, namely the interpersonal relationship between team members, trustwor-
thiness among them, the relationship among organizational citizenship behavior, and lastly, the moderating effect of leadership on the aforementioned factors in relationship to knowledge hiding. Finally, the goal was to explain links to expected team behavior if the effect of knowledge hiding is present, as well as extract theoretical and practical implications for a high-performance cross-functional team environment, using a questionnaire like previous research in the area of cross-functional teams.

This study focused on the prerequisites and consequences of knowledge hiding among cross-functional teams. Hypothesis 1 focused on the factor of team effectiveness and the deteriorating effect of knowledge hiding on this factor. Cross-functional teams fulfill a specific role in the analyzed scenario, as they consist of individuals from different departments pursuing different aims while applying individual methods. Functionally tasked with solving interdisciplinary problems, cross-functional teams fulfill the critical role of delivering organization-impacting results. However, appreciable levels of knowledge hiding undermine the necessary exchange of information and thereby prohibit the out-of-the-box thinking critical for the competence interplay in project teams of all sorts (Zhang & Min, 2019).

Preventing knowledge hiding is one of the highest priorities for a manager as a plethora of negative consequences may develop. Firstly, individuals’ personality traits change permanently from knowledge-seekers who actively participate and exchange ideas, past experiences, and methods toward knowledge hiders to remain silent and reluctant to meaningfully cooperate (Chatterjee et al., 2021). Secondly, missing out on exclusive knowledge results in losing competitive advantage, dampening, or even halting a project for undefined amounts of time, thereby postponing crucial project success.

Besides consequences, antecedents also play a significant role in the danger of growing knowledge hiding. Hypothesis 3 focused on the build-up of trust infrastructure, which negatively influences the possibility of knowledge hiding. Facilitating personal psychological safety and improving cooperation in all circumstances, the rising confidence and support from a shared mindset promote the cooperation between individuals immensely. The willingness of knowledge sharing thereby crucially depends on the improvement of individuals’ learning ability and willingness through the build-up of trust (Zhao, 2022). A consistent lack of trust amongst employees, on the other hand, might substantially impede the exchange of critical information, reducing collaborative efficiency.

According to $H_4$, organizational citizenship behavior negates the effects of knowledge hiding if supportive leadership is applied. Organizational citizenship behavior (OCB) coins a term focusing on all voluntary behavioral actions of significance that accompany the task-solving competence in day-to-day business (Kaur & Randhawa, 2021). Based on previous research, it was already suspected that advanced OCB is mainly expressed and developed by a social exchange on vertical and horizontal levels. Therefore, focusing on active exchange between individuals is essential to generate an open idea and discussion environment, transferring knowledge toward team and organizational structures.

Figure 2. Moderating effect of OCB
The moderator of leadership support has the surprising effect that the correlation between OCB and knowledge hiding decreases with higher leadership support so that at a very high OCB (+1 SD), knowledge hiding is slightly higher with higher leadership support than without. This phenomenon can probably be explained by social desirability bias. Social desirability is present when respondents prefer to give answers that they believe are more likely to meet with social approval than the true answer for which they fear social rejection (Nederhof, 1985). Since both OCB and knowledge hiding focus on one’s advantage and on influencing other people’s perceptions, the trend switch of moderator influence can be explained.

Lin et al. (2020) noted the role of leadership in regard to knowledge hiding. However, only the direct effects of adaptive leadership on knowledge hiding have been verified so far. The results indicate a level beyond, namely, the moderating effect of leadership principles on the daily business-decision making of individuals. Previous indices support the idea of moderating factors responsible for knowledge hiding in organizations; however, exact definitions have not been discovered so far (Xiong et al., 2021). The statistical methods applied in this paper connect the effect of leadership on OCB and its moderating role on knowledge hiding in cross-functional teams.

Based on the results of this study, it is strongly recommended to adopt an industrial sector-dependent, differentiated, and adaptive leadership style as the decision-making individual in cross-functional teams. As all members possess different rights and organizational background, it is crucial to define and enact clear boundaries and right of command to ensure effective communication and collaboration among the whole team. Implementing reliable and personalized procedures that accompany every team member allow continuous improvement of the status quo, effective managerial decision-making, and evaluation of the overall team performance (Pinto-Santos et al., 2022). Insufficient leadership can spiral out of control as other factors promoting knowledge hiding take over control (Xiong et al., 2021).

Putting a focus on the mutual recognition of team members and fostering the build-up of a shared vision can sustainably eliminate the room for a potential build-up of knowledge hiding. This tool requires the shifting from an individual and self-centered view towards a collective focus, only achievable through common determined leadership. Main performance indicators rely on the manifestation of a stability-minded environment that allows critical discussion of ideas while guaranteeing a resilience-backed tone, accepting the abandoning of failed concepts or ideas (Zhang & Min, 2019).

Higher participation inside cross-functional teams encourages individuals on all levels to interact and invest themselves to a higher degree than stricter, authoritarian leadership methods (Kaur & Randhawa, 2021). Following models of individual employees’ needs, it becomes evident that higher fulfillment of said needs positively increases the willingness to be involved in decision-making processes.

Lastly, inter-industrial competencies must be managed, as, depending on the field of industry, the backgrounds of each team member differ in financial, organizational, routine, and communication habits. Furthermore, applied and user-friendly infrastructure, including user-friendly UX-design, although becoming known as a term, still is not fully elaborated, resulting in not just room for improvement regarding content but also methodology (Saleh et al., 2022). Furthermore, cultural and legal frameworks, which have high levels of presence in interconnected supply chains, need to be kept in mind to allow a successful knowledge transfer.

**CONCLUSION**

The aim of this paper was to indicate the factors positively and negatively affecting or reacting to knowledge hiding in cross-functional teams. Cross-functional teams are an increasingly applied method in the manufacturing industrial environments in the western hemisphere. By carefully choosing the indi-
individuals from all departments inside a company, the exchange of implicit knowledge can reach significant levels due to easier communication and shared and adaptive leadership.

Knowledge hiding has a detrimental effect on the effectiveness of team structures, hindering innovation. The factor of trust is one of the few effective methods to promote knowledge exchange and bridging interpersonal conflicts independent of experience, authority, field of expertise, or age. From these results, the following conclusion can be drawn: active and supportive leadership, adapted to individual team members, precise rule sets and tasks, help foster the organizational citizenship behavior among individuals, thereby allowing a solid foundation for open and unhindered knowledge exchange. Due to the diverging external and internal factors of industrial development (taxation, labor laws, policies, and regulations), these lessons could only be verified with German commercial businesses of the manufacturing industry inside the automotive environment.

**AUTHOR CONTRIBUTIONS**

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**REFERENCES**

1. Aarabi, M. S., Subramaniam, I. D., & Akeel, A. B. A. B. (2013). Relationship between Motivational Factors and Job Performance of Employees in Malaysian Service Industry. *Asian Social Science, 9*(9), 301-310. https://doi.org/10.5539/ass.v9n9p301
2. Ali, M., Ali, I., Albort-Morant, G., & Leal-Rodríguez, A. L. (2021). How do job insecurity and perceived well-being affect expatriate employees’ willingness to share or hide knowledge? *International Entrepreneurship and Management Journal, 17*(1), 185-210. https://doi.org/10.1007/s11365-020-00638-1
3. Anand, P., & Jain, K. K. (2014). Big Five Personality Types & Knowledge Hiding Behaviour: A Theoretical Framework. *Archives of Business Research, 2*(5), 47-56. https://doi.org/10.14738/abfr.25.355
4. Arain, G. A., Bhatti, Z. A., Ashraf, N., & Fang, Y.-H. (2020). Top-Down Knowledge Hiding in Organizations: An Empirical Study of the Consequences of Supervisor Knowledge Hiding Among Local and Foreign Workers in the Middle East. *Journal of Business Ethics, 164*(3), 611-625. https://doi.org/10.1007/s10551-018-4056-2
5. Bass, B. M. (1995). Theory of transformational leadership redux. *The Leadership Quarterly, 6*(4), 463-478. https://doi.org/10.1016/1048-9843(95)90021-7
6. Bass, B. M., Avolio, B. J., Jung, D. L., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology, 88*(2), 207-218. https://doi.org/10.1037/0021-9010.88.2.207
7. Beijer, S., Peccei, R., Veldhoven, M., & Paauwe, J. (2021). The turn to employees in the measurement of human resource practices: A critical review and proposed way forward. *Human Resource Management Journal, 31*(1), 1-17. https://doi.org/10.1111/1748-8583.12298
8. Blankenship, A. (1942). Psychological Difficulties in Measuring Consumer Preference. *Journal of Marketing, 6*(4_part_2), 66-75. https://doi.org/10.1177/002224294200600402.1
9. Campion, M. A., Medsker, G. J., & Higgs, A. C. (1993). Relations Between Work Group
Characteristics and Effectiveness: Implications for Designing Effective Work Groups. *Personnel Psychology*, 46(4), 823-847. https://doi.org/10.1111/j.1744-6570.1993.tb01571.x

10. Casimir, G., Lee, K., & Loon, M. (2012). Knowledge sharing: Influences of trust, commitment and cost. *Journal of Knowledge Management*, 16(5), 740-753. https://doi.org/10.1108/13673271211262781

11. Chatterjee, S., Chaudhuri, R., Thrassou, A., & Vrontis, D. (2021). Antecedents and consequences of knowledge hiding: The moderating role of knowledge hiders and knowledge seekers in organizations. *Journal of Business Research*, 128, 303-313. https://doi.org/10.1016/j.jbusres.2021.02.033

12. Chiang, C.-F., & Hsieh, T.-S. (2012). The impacts of perceived organizational support and psychological empowerment on job performance: The mediating effects of organizational citizenship behavior. *International Journal of Hospitality Management*, 31(1), 180-190. https://doi.org/10.1016/j.ijhm.2011.04.011

13. Chiu, S.-F., & Chen, H.-L. (2005). Relationship Between Job Characteristics and Organizational Citizenship Behavior: The Medialional Role of Job Satisfaction. *Social Behavior and Personality: An International Journal*, 33(6), 523-540. https://doi.org/10.2224/sbp.2005.33.6.523

14. Cohen, S. G., Ledford, G. E., & Spreitzer, G. M. (1996). A Predictive Model of Self-Managing Work Team Effectiveness. *Human Relations*, 49(5), 643-676. https://doi.org/10.1177/001872676904900506

15. Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations: Knowledge Hiding in Organizations. *Journal of Organizational Behavior*, 33(1), 64-88. https://doi.org/10.1002/job.737

16. Cummings, L. L., & Bromiley, P. (1996). *Trust in Organizations: Frontiers of Theory and Research*. SAGE Publications, Inc. https://doi.org/10.4135/9781452243610

17. Dai, Y.-D., Dai, Y.-Y., Chen, K.-Y., & Wu, H.-C. (2013). Transformational vs transactional leadership: Which is better? A study on employees of international tourist hotels in Taipei City. *International Journal of Contemporary Hospitality Management*, 25(5), 760-778. https://doi.org/10.1108/IJCHM-Dec-2011-0223

18. Davenport, L. J., Allisey, A. F., Page, K. M., LaMontagne, A. D., & Reavley, N. J. (2016). How can organisations help employees thrive? The development of guidelines for promoting positive mental health at work. *International Journal of Workplace Health Management*, 9(4), 411-427. https://doi.org/10.1108/IJWHM-01-2016-0001

19. Deese, J., & Kaufman, R. A. (1957). Serial effects in recall of unorganized and sequentially organized verbal material. *Journal of Experimental Psychology*, 54(3), 180-187. https://doi.org/10.1037/h0040536

20. Delgado Piña, M. I., María Romero Martínez, A., & Gómez Martínez, L. (2008). Teams in organizations: A review on team effectiveness. *Team Performance Management, 14*(1/2), 7-21. https://doi.org/10.1080/13527590810860177

21. Demirkasimoglu, N. (2016). Knowledge Hiding in Academia: Is Personality a Key Factor? *International Journal of Higher Education*, 5(1), 128-140. https://doi.org/10.5430/ijhe.v5n1p128

22. Doolen, T. L., Hacker, M. E., & Van Aken, E. M. (2003). The impact of organizational context on work team effectiveness: A study of production team. *IEEE Transactions on Engineering Management*, 50(3), 285-296. https://doi.org/10.1109/TEM.2003.817296

23. Feng, J., & Wang, C. (2019). Does abusive supervision always promote employees to hide knowledge? From both reactance and COR perspectives. *Journal of Knowledge Management*, 23(7), 1455-1474. https://doi.org/10.1108/JKM-12-2018-0737

24. Han, M. S., Masood, K., Cudjoe, D., & Wang, Y. (2021). Knowledge hiding as the dark side of competitive psychological climate. *Leadership & Organization Development Journal*, 42(2), 195-207. https://doi.org/10.1108/LODJ-03-2020-0090

25. Hwang, Y. (2012). Understanding moderating effects of collectivist cultural orientation on the knowledge sharing attitude by email. *Computers in Human Behavior*, 28(6), 2169-2174. https://doi.org/10.1016/j.chb.2012.06.023

26. Jahanzeb, S., Fatima, T., Bouchenooghe, D., & Bashir, F. (2019). The knowledge hiding link: A moderated mediation model of how abusive supervision affects employee creativity. *European Journal of Work and Organizational Psychology*, 28(6), 810-819. https://doi.org/10.1080/13527590.2019.1659245

27. Kaur, K., & Randhawa, G. (2021). Exploring the influence of supportive supervisors on organisational citizenship behaviours: Linking theory to practice. *IHM Management Review*, 33(2), 156-165. https://doi.org/10.5465/amr.2017.0387

28. Kim, E.-J., & Park, S. (2020). Transformational leadership, knowledge sharing, organizational climate and learning: An empirical study. *Leadership & Organization Development Journal*, 41(6), 761-775. https://doi.org/10.1108/LODJ-12-2018-0455

29. Koay, K. Y., & Lim, P. K. (2021). Ethical leadership and knowledge hiding: Testing the mediating and moderating mechanisms. *Journal of Knowledge Management*, 26(3), 574-591. https://doi.org/10.1108/JKM-02-2021-0091

30. König, A., Graf-Vlachy, L., Bundy, J., & Little, L. M. (2020). A Blessing and a Curse: How CEOs’ Trait Empathy Affects Their Management of Organizational Crises. *Academy of Management Review*, 45(1), 130-153. https://doi.org/10.5465/amr.2017.0387

31. Ladan, S., Nordin, N. B., & Belal, H. M. (2017). Does knowledge based psychological ownership
matter? Transformational leadership and knowledge hiding: A proposed framework. *Journal of Business & Retail Management Research*, 11(4), 60-67. https://doi.org/10.24052/JBRMR/V11I504/DKBPOMTIAKHPF

32. Lanke, P. (2018). Knowledge hiding: Impact of interpersonal behavior and expertise. *Human Resource Management International Digest*, 26(2), 30-32. https://doi.org/10.1108/HRMID-01-2018-0010

33. Lee, K.-J. (2016). Sense of calling development. *Journal of Hospitality Management*, 35, 283-303. https://doi.org/10.1016/j.jhotm.2015.06.002

34. Liguori, E. W., & McLarty, B. (2012). The moderating role of leadership. *Journal of Business Research*, 55, 161-172. https://doi.org/10.1016/j.jbusres.2011.09.026

35. Lin, M., Zhang, X., Ng, B. C. S., & Zhong, L. (2020). To Empower or Not to Empower? Multilevel Effects of Empowering Leadership on Knowledge Hiding. *International Journal of Hospitality Management*, 89, 102540. https://doi.org/10.1016/j.ijhm.2020.102540

36. Malik, A. (2017). *Human Resource Management and the Global Financial Crisis: Evidence from India's IT/BPO Industry* (1st ed.). Routledge. https://doi.org/10.4324/9781315513171

37. Maravilhas, S., & Martins, J. (2019). Strategic knowledge management in a digital environment: Tacit and explicit knowledge in Fab Labs. *Journal of Business Research*, 94, 353-359. https://doi.org/10.1016/j.jbusres.2018.01.061

38. Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14(2), 224-247. https://doi.org/10.1016/0001-8791(79)90072-1

39. Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, 15(3), 263-280. https://doi.org/10.1002/ ejsp.2420150303

40. Nguyen, T.-M. (2021). Four-dimensional model: A literature review in online organisational knowledge sharing. *VINE Journal of Information and Knowledge Management Systems*, 51(1), 109-138. https://doi.org/10.1108/VIIKMS-05-2019-0077

41. Nguyen, T.-M., Malik, A., & Budev. P. (2022). Knowledge hiding in organizational crisis: The moderating role of leadership. *Journal of Business Research*, 139, 161-172. https://doi.org/10.1016/j.jbusres.2021.09.026

42. Ocampo, L., Acedillo, V., Bucanador, A. M., Balo, C. C., Ladgamo, Y. J., & Tupa, N. S. (2018). A historical review of the development of organizational citizenship behavior (OCB) and its implications for the twenty-first century. *Personnel Review*, 47(4), 821-862. https://doi.org/10.1108/PR-04-2017-0136

43. Organ, D. W. (1994). Personality and Organizational Citizenship Behavior. *Journal of Management*, 20(2), 465-478. https://doi.org/10.1177/014920639402000208

44. Ozili, P. K., & Arun, T. (2020). Spillover of COVID-19: Impact on the Global Economy. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3562570

45. Pinto-Santos, A. R., George Reyes, C. E., & Cortés-Peña, O. F. (2022). Training and Educational Innovation: An Evaluative Perspective of the Digital Teaching Competence. *International Journal of Emerging Technologies in Learning (IJET)*, 17(07), 38-53. https://doi.org/10.3991/ijet.v17i07.28867

46. Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*, 63(1), 539-569. https://doi.org/10.1146/annurev-psych-120710-100452

47. Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

48. Polanyi, M. (1962). Tacit Knowing: Its Bearing on Some Problems of Philosophy. *Reviews of Modern Physics*, 34(4), 601-616. https://doi.org/10.1103/RevModPhys.34.601

49. Saleh, A. M., Abuaaddou, H. Y., Alanarsi, I. S., & Enaizan, O. (2022). The Evaluation of User Experience on Learning Management Systems Using UEQ. *International Journal of Emerging Technologies in Learning (IJET)*, 17(07), 145-162. https://doi.org/10.3991/ijet.v17i07.29525

50. Semerci, B. A. (2019). Examination of knowledge hiding with conflict, competition and personal values. *International Journal of Conflict Management*, 30(1), 111-131. https://doi.org/10.1108/IJCM-03-2018-0044

51. Singh, R. (2021). Predictors of organisational embeddedness: An investigation into perceived organisational support and organisational trust. *International Journal of Human Resources Development and Management*, 21(4), 252-266. https://doi.org/10.1504/IJHRDM.2021.120304

52. Ton, A. D., & Hammerl, L. (2021). Knowledge management in the environment of cross-functional team cooperation: A systematic literature review. *Knowledge and Performance Management*, 5(1), 14-28. http://dx.doi.org/10.21511/kpm.05(1).2021.02

53. Van Dyne, L., & LePine, J. A. (1998). Helping and Voice Extra-Role Behaviors: Evidence of Construct and Predictive Validity. *Academy of Management Journal*, 41(1), 108-119. https://doi.org/10.2307/256902

54. Williams, L. J., & Anderson, S. E. (1991). Job Satisfaction and
APPENDIX A

Table A1. Questionnaire

| Category                        | Items                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interpersonal relationship     | I am willing to put in a great deal of effort beyond what is normally expected in order to help my team member be successful  
commitment                                                                 |                                                                                                                                           | Source                                                                                                                                                                                                                                                                                      |
|                                | I talk up this cross-functional team to my friends as a great team to work for                                                                                                                                                                                                                                                                  | Mowday et al. (1979)                                                                                                                  |
|                                | I would accept almost any type of job assignment in order to keep working for this cross-functional team                                                                                                                                                                                                                                           |                                                                                                                                           |
|                                | I find that my values and the cross-functional team’s value are very similar                                                                                                                                                                                                                                                                   |                                                                                                                                           |
|                                | I am proud to tell others that I am part of this cross-functional team                                                                                                                                                                                                                                                                       |                                                                                                                                           |
|                                | This cross-functional team really inspires the very best in me in the way of job performance                                                                                                                                                                                                                                               |                                                                                                                                           |
|                                | I really care about the fate of this cross-functional team                                                                                                                                                                                                                                                                             |                                                                                                                                           |
| Altruism                       | I help others who have heavy workloads                                                                                                                                                                                                                                                                                                      |                                                                                                                                           |
|                                | I help others who have been absent                                                                                                                                                                                                                                                                                                          |                                                                                                                                           |
|                                | I willingly help others who have work-related problems                                                                                                                                                                                                                                                                                     |                                                                                                                                           |
|                                | I help orient new people even though it is not required                                                                                                                                                                                                                                                                                     |                                                                                                                                           |
|                                | I am always ready to lend a helping hand to those around him/her                                                                                                                                                                                                                                                                          |                                                                                                                                           |
|                                | I take steps to prevent problems with other workers                                                                                                                                                                                                                                                                                         |                                                                                                                                           |
| Courtesy                       | I am mindful of how his/her behavior affects other people’s jobs                                                                                                                                                                                                                                                                          |                                                                                                                                           |
|                                | I do not abuse the rights of others                                                                                                                                                                                                                                                                                                        |                                                                                                                                           |
|                                | I try to avoid creating problems for coworkers                                                                                                                                                                                                                                                                                            |                                                                                                                                           |
|                                | I consider the impact of his/her actions on coworkers                                                                                                                                                                                                                                                                                    |                                                                                                                                           |
| Civic virtue                   | I attend meetings that are not mandatory but are considered important                                                                                                                                                                                                                                                                     |                                                                                                                                           |
|                                | I attend functions that are not required but help the company image                                                                                                                                                                                                                                                                       |                                                                                                                                           |
|                                | I keep abreast of changes in the organization                                                                                                                                                                                                                                                                                              |                                                                                                                                           |
|                                | I read and keep up with organization announcements, memos, etc.                                                                                                                                                                                                                                                                           |                                                                                                                                           |
| Sportsmanship                  | I consume a lot of time complaining about trivial matters ( R )                                                                                                                                                                                                                                                                           |                                                                                                                                           |
|                                | I always focus on what is wrong rather than the positive side ( R )                                                                                                                                                                                                                                                                       |                                                                                                                                           |
|                                | I tend to make “mountains out of molehills” ( R )                                                                                                                                                                                                                                                                                           |                                                                                                                                           |
|                                | I always find fault with what the organization is doing ( R )                                                                                                                                                                                                                                                                             |                                                                                                                                           |
|                                | I am the classic “squeaky wheel” that always needs greasing ( R )                                                                                                                                                                                                                                                                         |                                                                                                                                           |
| Conscientiousness             | I obey company rules and regulations even when no one is watching                                                                                                                                                                                                                                                                         |                                                                                                                                           |
|                                | I am one of my most conscientious employees                                                                                                                                                                                                                                                                                                 |                                                                                                                                           |
|                                | I believe in giving an honest day’s work for an honest day’s pay                                                                                                                                                                                                                                                                          |                                                                                                                                           |

55. Wuryanti, W., & Setiawan, I. (2017). A Model for Improving Human Resource Performance in the Context of Knowledge Donating. Jurnal Dinamika Manajemen, 8(2). https://doi.org/10.15294/jdm.v8i2.12761

56. Xiao, M., & Cooke, F. L. (2019). Why and when knowledge hiding in the workplace is harmful: A review of the literature and directions for future research in the Chinese context. Asia Pacific Journal of Human Resources, 57(4), 470-502. https://doi.org/10.1111/1744-7941.12198

57. Xiong, C., Chang, V., Scuotto, V., Shi, Y., & Paoloni, N. (2021). The social- psychological approach in understanding knowledge hiding within international R&D teams: An inductive analysis. Journal of Business Research, 128, 799-811. https://doi.org/10.1016/j.jbusres.2019.04.009

58. Zhang, Z., & Min, M. (2019). The negative consequences of knowledge hiding in NPD project teams: The roles of project work attributes. International Journal of Project Management, 37(2), 225-238. https://doi.org/10.1016/j.ijproman.2019.01.006

59. Zhao, J. (2022). Influence of Knowledge Sharing on Students’ Learning Ability under the Background of “5G+AI.” International Journal of Emerging Technologies in Learning (IJET), 17(1), 133-145. https://doi.org/10.3991/ijet.v17i01.28533
| Category                  | Items                                                                                                                                                                                                 | Source                        |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Rationalized hiding       | In this specific situation, I explained that I would like to tell him/her but was not supposed to<br>In this specific situation, I explained that the information is confidential and only available to people on a particular project<br>In this specific situation, I told him/her that my boss would not let anyone share this knowledge<br>In this specific situation, I said that I would not answer his/her questions                                                                 | Connelly et al. (2012)        |
| Playing dump              | In this specific situation, I explained that I did not know the information<br>In this specific situation, I said that I did not know, even though I did<br>In this specific situation, I pretended I did not know the information<br>In this specific situation, I pretended I did not know what s/he was talking about<br>In this specific situation, I said that I was not very knowledgeable about the topic                                                                 |                               |
| Evasive hiding            | In this specific situation, I agreed to help him/her but never really intended to<br>In this specific situation, I agreed to help him/her but instead gave him/her information different from what s/he wanted<br>In this specific situation, I told him/her that I would help him/her out later but stalled as much as possible<br>In this specific situation, I offered him/her some other information instead of what he/she really wanted                                                                 |                               |
| Leadership support        | The supervisors can understand my situation and give me encouragement and assistance<br>The supervisor encourages me to take the pandemic as a challenge<br>The supervisor encourages us to make efforts toward fulfilling the company vision during the pandemic<br>The supervisor encourages me to think about the pandemic from a new perspective<br>The supervisor spends time understanding my needs                                                                                     | Dai et al. (2013)             |
| Trust                     | I think the people in cross-functional teams tell the truth in negotiations<br>I think that the team members meet negotiated obligations to our department<br>In our opinion, my team member is reliable<br>I think that people in cross-functional teams succeed by stepping on other people<br>I feel that cross-functional team member tries to get the upper hand.<br>I think that some cross-functional team member takes advantage of my problems.<br>I feel that cross-functional team member negotiates with us honestly<br>I feel that cross-functional team members will keep their words<br>I think cross-functional team members do not mislead me<br>I feel cross-functional team members try to get out of their commitments<br>I feel cross-functional team members negotiate joint expectations fairly<br>I feel cross-functional team members take advantage of vulnerable people                                                                 | Cummings and Bromiley (1996)  |
| Team effectiveness        | My team is fulfilling specific job responsibilities<br>My team meets performance standards and expectations<br>The team performance level is satisfactory<br>My team is effective<br>My team performs better than many other teams which perform the same job<br>My team produces high-quality work                                                                                                          | Chiang and Hsieh (2012)       |