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The Dark Side of Cross-Functional Teams: The Influence of Individual's Perception and Knowledge Hiding

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ABSTRACT

In recent times, the challenges of business success require the use of cross-functional collaboration to solve social and business problems equally. However, in addition to these benefits, this interdisciplinary teamwork also poses dangers, such as knowledge hiding.

This dissertation investigates knowledge hiding in intra-team coopetition, considering the resulting factors affecting team effectiveness. A model was used that relates various influencing factors such as the individual's personality, perceptions within the organization, perceptions toward the team and the supervisor to the individual's behavior. The objective of this dissertation revolves around how the perception of the individual in cross-functional teams influences knowledge-hiding behavior. The model was empirically applied in three sub-studies with participants working in cross-functional teams. Seven hypotheses were formulated and statistically analyzed. The empirical results show that numerous factors influence individuals' knowledge-hiding behavior. Antagonistic self-perceptions and perceptions of a competitive supervisor led to the hiding of knowledge in the team by the individual. A perceived competitive climate in the team also leads to knowledge hiding, but competitive orientation in the individual itself does not. In this context, the correlation of trustworthiness to other team members is moderated. A supportive leader can influence knowledge hiding depending on the maturity level of the employees. The results fill the research gap, on the one hand, for individuals in cross-functional teams to self-reflect and manage from knowledge and, on the other hand, for supervisors and managers in designing business organizations, namely that supportive leadership is essential for successful cross-functional team behavior.

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1 BACKGROUND OF THE WORK AND ITS AIMS

Advancing digitization also means rapid change in the work of cross-functional teams. Thanks to ever-improving technology, such as smartphones and mobile Internet, knowledge can be accessed anywhere and promotes team cooperation (Ton et al., 2022a). This possibility makes it feasible to request explicit knowledge without obstacles at any time. Internal knowledge, which is only accessible within the company, on the other hand, remains a commodity that cannot be retrieved so easily. It is action-bound and only emerges with the experience of the team members. Under these conditions, the dissertation investigates the circumstances and possibilities of how cross-functional teams can be built to overcome the obstacles of provision of internal knowledge. Among other things, the dissertation aims to identify perceptions of the individual in cross-functional teams that lead to the deferral of knowledge. The dissertation pays particular attention to the individual's perceptions of the team, the supervisor, and self-perceptions. Additionally, the effects to what extent the supervisor has an influence on the individual and the knowledge hiding are investigated. With the objective, the following research questions (RQ) are addressed:

RQ1: What implications for knowledge management behavior in cross-functional teams can be derived from the existing studies?

RQ2: To what extent do self-perception and supervisor perception influence knowledge hiding in cross-functional teams?

RQ3: To what extent does the individual's perception of the cross-functional team influence knowledge hiding?

RQ4: How can leadership influence the perceptions of cross-functional teams to prevent knowledge from being hidden?

2 MATERIAL AND METHODS

2.1 Material

The studies use different scales to measure the variables. For study I), the various influencing factors of individual competitiveness leading to knowledge hiding were measured, mainly involving antagonism and the behavior of a competitive supervisor toward increasing individual competitiveness. In study II), the influencing factor of competitive climate in cross-functional teams leading to knowledge hiding, moderated by the effects of perceptions of dominance and trust, was measured by applying different scales. For study III), the various scales leading the influencing factors of individual perception of knowledge hiding are mainly interpersonal relationship commitment for team members, trustworthiness for team members, and organizational citizenship behavior significantly. In addition, the moderating role of leadership support and the influence of knowledge hiding on team effectiveness are demonstrated.

First, a brief literature review was conducted defining the measurement factors that researchers have previously used in network-type contexts within organizations. The models were organized by changing the level of detail of

the personality analysis according to the specific research phenomena, namely competition and cooperation between cross-functional teams (Ghobadi and D'Ambra 2012b). The scale of Brown et al. (1998) was used to measure supervisor competitiveness and a similar structure was used to formulate the items in the questionnaire.

Second, the items of the Personality Inventory for DSM-5 by Maples et al. (2015) were used to measure the personality traits of individuals. Due to the length of the study and the associated dropout rate, the short form of the main actors under study recommended by Maples et al. (2015): Deception, grandiosity, and manipulativeness was used.

Third, the widely used scales of Connelly et al. (2012) were chosen to measure knowledge hiding. The construct of second-order knowledge hiding includes three latent constructs, namely evasive hiding, playing dumb, and rationalized hiding.

Fourth, to measure perceptions of dominance, the article by Gough et al. (1951) was included. In the study, the items were developed in accordance with participants from different classes at the University of Minnesota. In summary, two of the 60 items from Gough et al. (1951) were selected and adapted for this study to measure dominance in the context of cross-functional teams.

Fifth, the items measuring trust (towards the cross-functional team-member) were developed by the author, as the unclear understanding of the concept of trust without a clarifying definition was considered a confounding factor for current and further research.

Sixth, a classic short questionnaire, called Organizational Commitment Questionnaire – OCQ, to measure commitment was used. To assess team

members' interpersonal commitment, seven of the 15 items from the study by Mowday et al. (1979) were used and adapted for the survey.

Seventh, to measure leadership support, five of the eight items of the scale of Dai et al. (2013) were used to measure supportive leadership style. Since supportive leadership is characterized by trust, loyalty, and respect (Bass, 1995), five of the items of Dai et al. (2013) ideally suited to assess perceptions of supportive leadership.

In eighth place, to measure OCB, the inventory of Chiang & Hsieh was (2012) was applied.

Nineth, team effectiveness was also measured using Chiang & Hsieh's scale (2012). It was originally used for job performance in the tourism industry but is general enough that it could be adapted for cross-functional team effectiveness.

To avoid confusion among participants due to different scales and labels of the poles, a standardized Likert scale was created for all items taken from the sources. All response options were measured on a bipolar, eleven-point rating scale ranging from 0 (strongly disagree) to +11 (strongly agree).

2.2 Procedure

To empirically examine the conceptual model and test the hypotheses, a survey of cross-functional teams was conducted. Respondents were asked to complete a structured questionnaire with metric scales.

The study was divided into three studies. This had the advantage of significantly shortening the survey duration to reduce the nonresponse rate. Especially with web surveys, the premature dropout rate is relatively high in contrast to other survey types (Čehovin et al., 2022). Therefore, care was taken

to ensure that the survey did not take longer than 10 minutes to complete in the pre-test.

Because the study used data based on self-report, another critical task was to consider and put into perspective the problem of common method bias (CMB). CMB refers to a bias in empirical measurement results that arises because survey respondents are simultaneously the source of both the exogenous and endogenous variable (Podsakoff & Organ, 1986). Thus, participants can often draw inferences about the underlying hypotheses from the questionnaire and adjust their response behavior accordingly.

First, CMB was avoided from the outset by considering the concepts of Podsakoff et al. (2003, 2012) when designing the questionnaire. Regarding the structure of the research instrument, the questions were clearly separated; the questions about the dependent constructs were asked before the questions about the independent constructs. Only one continuous rating scale was used throughout the questionnaire. In addition, the specific purpose of the studies was not disclosed to prevent bias in the results, and respondent confidentiality was maintained. 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.

In terms of participants, the survey was conducted only in Central Europe. Moreover, it was published on SoSciSurvey.com in order to collect, pool and understand the data. All three surveys were published consecutively. The first survey ran from October 21 to November 24, 2021, the second survey ran from January 13 to January 31, 2022, and the third survey ran from February 01 to April 25, 2022.

3 RESULTS AND DISCUSSIONS

3.1 Results

The sample for all three studies consisted of a heterogenous group. Although the studies were collected at different times, surprisingly, the distribution of demographic data is very similar across all three studies. The reason for this is assumed to be that the survey was published in SurveyCircle[1] for all three studies to reach the participants. The descriptive data is provided in Table 1.

Table 1 Overall descriptive data

Gender in percent				Age in percent mean:				Highest education in percent:			
Study	I)	II)	III)		I)	II)	III)		I)	II)	III)
Male	0.41	0.44	0.41	< 21	0.02	0.03	0.01	Secondary school	0.01	0.01	0
Female	0.59	0.56	0.59	21 - 30	0.76	0.72	0.72	High school	0.03	0.02	0.07
Other				31 - 40	0.14	0.18	0.21	Bachelor	0.18	0.37	0.25
				31 - 50	0.06	0.06	0.04	Master	0.56	0.42	0.49
				51- 60	0.01	0.01	0.01	PhD	0.17	0.16	0.17
				> 60	0.01	0	0.01	Other	0.05	0.02	0.01

$N_{Study\ I)}$= 131, $N_{Study\ II)}$= 119, $N_{Study\ III)}$=130
Source: author's data

3.1.1 Self-perception and perception towards the supervisor

Structural equation model (SEM) in Stata 14.0 was applied to the results to test the assumed model. In general, the proposed model was supported by the zero-order correlations. Antagonism was significantly correlated with individual competitiveness, knowledge hiding, and competitive supervisor (r = 0.34, $p < 0.01$; r = 0.64, $p < 0.01$; r = 0.39, $p < 0.01$). In addition, the correlation between competitive supervisor and individual competitiveness

[1] SurveyCircle.com is a website where students and researchers can publish their surveys to acquire participants.

and knowledge hiding was significant (r = 0.24, $p < 0.05$; r = 0.46, $p < 0.01$). Knowledge hiding was positively correlated with individual competitiveness (r = 0.19, $p < 0.05$) (see Table 2).

Table 2 Means, standard deviations, intercorrelations of latent variables and Cronbach's alpha of study I).

	Variable	M	SD	1	2	3	4	Cronbach's α
1	Antagonism	3.82	2.22	1				0.95
2	Individual competitiveness	7.7	1.78	0.34**	1			0.78
3	Knowledge hiding	4.29	2.36	0.64**	0.19*	1		0.93
4	Competitive supervisor	5.2	2.54	0.39**	0.24**	0.46**	1	0.83

Notes: $N_{Study\ I)} = 131$ **$p < 0.01$, *$p < 0.05$; Source: (Ton et al., 2022b)

In the second step, the model fit was tested. In the first model, only the paths from the hypotheses were entered. The model did not converge, so it was terminated after 10 iterations. With two additional structural paths that had the largest covariances, the model subsequently converged. Using a third structural path, the fit indices for the model were good enough (see Table 3).

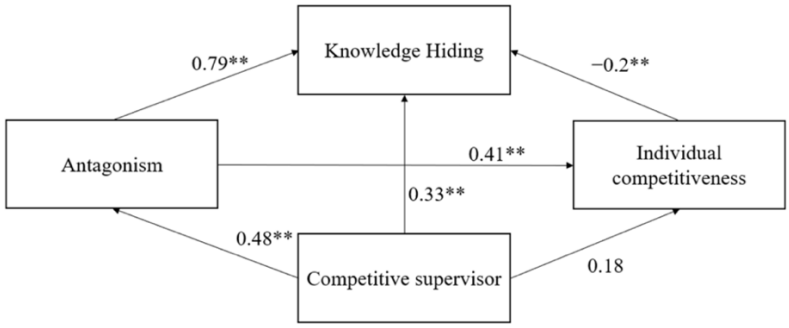
Table 3 Improving confirmatory factor analysis by adding structural paths.

Model	Description	χ^2	CFI	WLI	SRMR	RMSEA
1	3 modification covariances added	114.17	0.94	0.92	0.06	0.08
2	2 modification covariances added	127.73	0.93	0.91	0.08	0.09
3*	1 modification covariance added	190.72	0.87	0.83	0.15	0.13
4*	Hypothetical model	210.17	0.85	0.81	0.19	0.14

*only 10 iterations, since no convergence; Source: (Ton et al., 2022b)

The model with three additional structural paths has an overall good fit ($\chi 2 = 114.17$, $p < 0.001$; CFI = 0.94, TLI = 0.92, RMSEA = 0.08, SRMR = 0.06). As shown in Figure 9, H1 is rejected because individuals with high competitiveness show lower expressions of knowledge hiding.

H2 is partially supported. Individuals with antagonistic personality traits show increased knowledge hiding, while the correlation of competitive supervisor and individual competitiveness is not significant. As model fit was improved by structural paths, further significant correlations emerged within the model. As model fit was improved by structural paths, further significant correlations emerged within the model. An environment with a competitive supervisor leads to antagonism and knowledge hiding. Antagonism leads to knowledge hiding.



Notes: **p < 0.01

Figure 1 Standardized path loads

Source: (Ton et al., 2022b)

3.1.2 Perceptions toward cross-functional team members

Descriptive statistics for the main variables of interest to the study II) are presented in Table 4. Knowledge hiding was significantly correlated with competitive climate, trust, and dominance (r = 0.53, $p < 0.01$, r = -0.3, $p < 0.01$, r = 0.4, $p < 0.01$). In addition, the correlation between dominance and confidence was significant (r = -0.46, $p < 0.01$).

Table 4 Means, standard deviations, intercorrelations of latent variables and Cronbach's alpha of study II).

	Variables	M	SD	1	2	3	4	5	6	7	8	9	α
1	IRC	6.42	2.28	1									0.94
2	OCB	7.13	1.66	0.46**	1								0.95
3	Knowledge Hiding	4.32	2.37	-0.3**	-0.56**	1							0.95
4	Leadership Support	6.61	2.44	0.35**	0.43**	-0.3**	1						0.89
5	Trust	6.64	1.93	0.52**	0.61**	-0.47**	0.39**	1					0.95
6	Team effectiveness	7.28	2.47	0.62**	0.64**	-0.5**	0.37**	0.71**	1				0.97
7	Age	8.96	5.34	-0.02	-0.2*	0.17*	-0.2*	-0.1	-0.11	1			-
8	Gender	1.6	0.5	0.05	0.16	-0.18*	0.13	0.12	0.15	-0.26	1		-
9	Education	3.84	0.91	0.12	0.01	-0.02	-0.06	0.08	-0.03	0.28**	0.13	1	-

Notes: $N_{Study\ II)}$= 119 ** $p < 0.01$, * $p < 0.05$. Source: author's data

Hypotheses were tested using a series of hierarchical linear regression analyses with Stata 14 (Table 6). Collinearity diagnostics showed that multicollinearity was not a significant problem (with tolerance indicators ranging from 0.66 to 0.93 and VIF values ranging from 1.07 to 1.51).

First, the control variables were included in Model 1, followed by the independent variables and the moderator variables in Model 2. Model 3 includes the interactions (competitive climate x trust; competitive climate x dominance) related to the outcome variable, knowledge hiding. Across the models, R^2 increases and shows a steady improvement in exploration power, as seen in Table 5.

Table 5 Effects of competitive psychological climate on knowledge hiding.

Variable	Model 1 Beta	SE	Model 2 Beta	SE	Model 3 Beta	SE	Results
Independent variable							
Competitive climate			0.37**	0.06	0.76**	0.23	H4 supported
Moderator variables							
Dominance			0.2**	0.07	0.09	0.14	
Trust			-0.12	0.07	0.25	0.13	
Interaction effects							
Competitive climate X Dominance					0.02	0.02	H5 not supported
Competitive climate X Trust					-0.07**	0.02	H6 supported
Control variables							
Age	-0.10	0.05	-0.01	0.04	-0.02	0.04	
Gender	0.02	0.43	0.02	0.36	-0.01	0.33	
Education	0.48	0.28	0.33	0.23	0.38	0.21	
Adj. R^2	< 0.01**			0.37**		0.48**	
Δ Adj. R^2				0.37		0.11	

Notes: *$p < 0.05$, **$p < 0.01$, $N_{Study\ II)} = 119$. Source: author's data

Model 2 shows that competitive climate leads to knowledge hiding (β =0.37, $p < 0.01$), supporting H3. H4 predicts that there is a stronger relationship between competitive climate and knowledge hiding when the degree of dominance or trustworthiness is higher. This can be partially supported. The results in Model 3 suggest a positive interaction effect for dominance, but it is not significant, so the effect of dominance in H4 is not supported. Furthermore, the results show a consistent pattern of a opposing and significant relationship between competitive climate and knowledge hiding moderated by trust (β = -0.07, $p < 0.01$), which supports the effect of trust in H4. The moderating effect of trust is shown in Figure 10. The simple slope

analysis showed that the correlation between competitive climate and knowledge hiding becomes significantly weaker at high levels of trust.

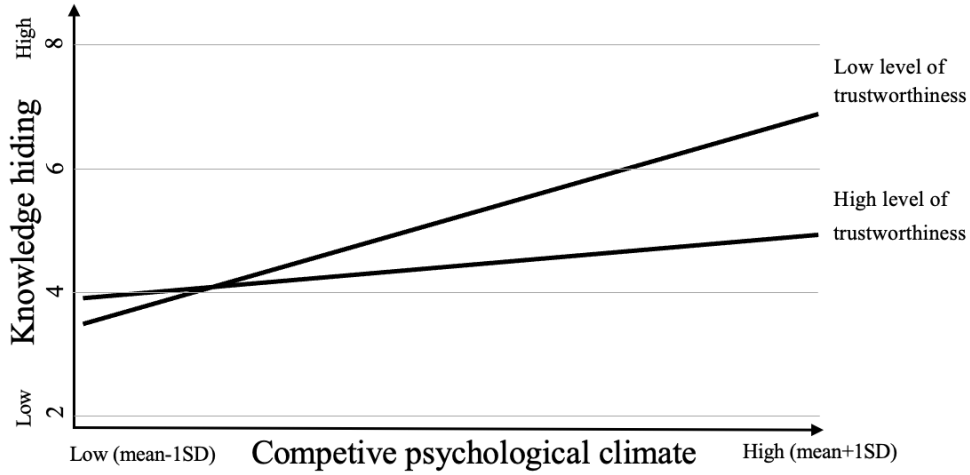


Figure 2 The moderating effect of trust in the competitive climate and the relationship between knowledge hiding

Source: author's representation

3.1.3 Influence of supportive leadership on knowledge hiding

Descriptive statistics for the main variables of interest in the study III) are shown in Table 6. Knowledge hiding places correlated significantly negatively with IRC (r = -0.3, $p < 0.01$), OCB (r = -0.56, $p < 0.01$), leadership support (r = -0.3, $p < 0.01$), trust (r = -0.47, $p < 0.01$), team effectiveness (r = -0.5, p < 0.01), gender (r = -0.3, $p < 0.05$), and positively correlated with age (r = 0.17, $p < 0.05$). IRC was significantly positively correlated with OCB (r = 0.46, $p <$ 0.01), leadership support (r = 0.35, p < 0.01), trust (r = 0.52, $p < 0.01$), and team effectiveness (r = 0.62, $p < 0.01$). There was also a positive correlation between OCB and leadership support (r = 0.43, $p < 0.01$), trust (r = 0.61, $p <$ 0.01), and team effectiveness (r = 0.64, $p < 0.01$). Trust and team effectiveness correlated significantly positively with leadership support (r = 0.39, $p < 0.01$;

r = 0.37, $p < 0.01$), and trust and team effectiveness also correlated significantly positively (r = 0.71, $p < 0.01$). Age additionally correlated with education (r = 0.28, $p < 0.01$).

Table 6 Means, standard deviations, intercorrelations of latent variables and Cronbach's alpha.

	Variables	M	SD	1	2	3	4	5	6	7	8	9	α
1	IRC	6.42	2.28	1									0.94
2	OCB	7.13	1.66	0.46**	1								0.95
3	Knowledge Hiding	4.32	2.37	-0.3**	-0.56**	1							0.95
4	Leadership Support	6.61	2.44	0.35**	0.43**	-0.3**	1						0.89
5	Trust	6.64	1.93	0.52**	0.61**	-0.47**	0.39**	1					0.95
6	Team effectiveness	7.28	2.47	0.62**	0.64**	-0.5**	0.37**	0.71**	1				0.97
7	Age	8.96	5.34	-0.02	-0.2*	0.17*	-0.2*	-0.1	-0.11	1			-
8	Gender	1.6	0.5	0.05	0.16	-0.18*	0.13	0.12	0.15	-0.26	1		-
9	Education	3.84	0.91	0.12	0.01	-0.02	-0.06	0.08	-0.03	0.28**	0.13	1	-

Notes: $N_{Study\ III)} = 130$ ** $p < 0.01$, * $p < 0.05$. Source: author's data

Hypotheses were tested using a series of linear regression analyses with Stata 14 (Table 7). All variables were standardized to mitigate multicollinearity. In addition, collinearity diagnostics showed that multicollinearity was not a significant problem (with tolerance indicators ranging from 0.53 to 0.87 and VIF values ranging from 1.15 to 1.86).

Table 7 shows the results of the regression analysis for team effectiveness as a function of knowledge hiding. The overall model is significant (F = 43.79, $p < 0.01$). It explains a major part of the variance of the dependent variable (R^2 =0.2549). According to the regression analysis results, H5 can be confirmed: As knowledge hiding increases, team effectiveness decreases (r = -0.486, $p < 0.01$).

Table 7 Linear regression of knowledge hiding on team effectiveness.

Source	**SS**	**df**	**MS**	Number of observations	=	130
				F(1, 3)	=	43.79
Model	186.527	1	186.527	Probability > F	<	0.01
Balance	545.217	128	4.259	R^2	=	0.2549
				Adj. R^2	=	0.2491
Total	731.744	129	5.672	Root MSE	=	2.0639
Team Effectiveness	**Coef**	**Std. Err.**	**T**	**P > t**	**95% Conf. interval**	
Knowledge hiding	-.486	0.073	-6.62	<0.01	-0.632	-0.341
_cons	7.869	0.565	13.93	<0.01	6.751	8.987

Notes: $N_{Study\ III)} = 130$. Source: author's data

With regard to H6 and H7, the control variables (namely: gender, age, and education) were included 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 improvement and significance in exploration power, which can be seen in Table 14.

Table 8 Hierarchical linear regression of study III)

Variable	Model 1 β	SE	Model 2 β	SE	Model 3 β	SE	Results
Independent variable							
IRC			-0.003	0.09	-0.11	0.27	H9 rejected
Trust			-0.25*	0.12	-0.18	0.29	H8 supports
OCB			-0.57**	0.14	-1.04**	0.3	H10 supports
Moderator variable							
Support for managers			-0.03	0.08	-0.82	0.33	
Interaction effects							
IRC X Leadership support					0.01	0.04	H11a rejected
Trust X Leadership support					-0.002	0.04	H11b rejected
OCB X Leadership support					0.1*	0.05	H11c supported
Control variable							
Age	0.06	0.04	0.03	0.03	0.02	0.04	
Gender	-0.62	0.43	-0.28	0.37	-0.34	0.2	
Education	-0.1	23	-0.11	0.2	-0.11	0.37	
R^2	0.05			0.31		0.33	
ΔR^2				0.26		0.02	

** $p < 0.01$, * $p < 0.05$. Source: author's data

H6 predicts that there is a relationship between IRC, Trust and OCB and knowledge hiding. The results in Model 2 suggest all three variables have a decreasing effect on knowledge hiding, but only trust and OCB were significantly, so H6 is only partially supported. It shows that trust is decreasing knowledge hiding (β =-0.25, $p < 0.05$), supporting the effect of trust on knowledge hiding in H6. OCB decreases the expression of knowledge hiding, supporting the effect of OCB and knowledge hiding in H6 (β = -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 amplifying but not significant, rejecting H7a. In addition, the interaction effects of leadership support on trust and knowledge hiding are very weakly correlated, but not significantly, rejecting H7b. The results show a consistent pattern of significant relationships between OCB and knowledge hiding moderated by leader support ($\beta = 0.1$, $p < 0.01$), supporting H7c. The moderating effect of OCB is shown in Figure 3. The simple slope analysis indicated that the relationship between OCB and knowledge hiding weakens at high levels of leadership support. Knowledge hiding is more prevalent at low OCB (1-SD) and low leadership support than at higher leadership support. A slight reversal occurs at high OCB (1+SD). Knowledge hiding is slightly more common with high leadership support.

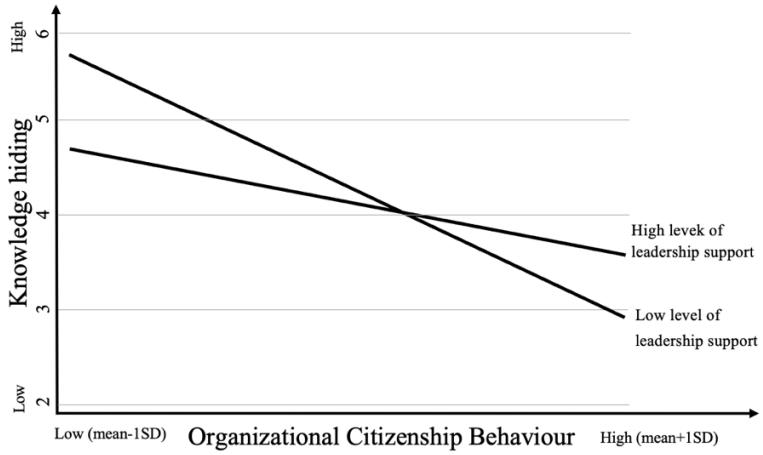


Figure 3 The moderating effect of Organizational Citizenship Behavior and knowledge-hiding behavior.

Source: author's representation

The three studies include a total of seven hypotheses, each examining different facets of individuals' perceptions of cross-functional teams. The first study examines hypotheses 1 and 2, the second study examines hypotheses 3 - 5,

and the final study examines hypotheses 6 and 7. Table 9 provides an overview of the hypotheses in the three studies. Of the total 7 hypotheses (hypothesis 7 consists of three sub-hypotheses), 3 hypotheses are confirmed, 3 hypotheses are partially confirmed, and the others were rejected, which is shown in Table 9.

Table 9 Overview of the results of the hypotheses

Derived Hypotheses	**Results**
Hypothesis 1: Individuals who have a high drive for competition tend to hide knowledge.	H1 rejected
Hypothesis 2: Individually competitiveness is increased by antagonism and competitive supervisor.	H2 partially supported
Hypothesis 3: High competitive psychological climate increases the expression of knowledge hiding.	H3 supported
Hypothesis 4: Trustworthiness and Dominance have a decreasing moderating effect between competitive climate and knowledge hiding.	H4 partially supported
Hypothesis 5: Knowledge hiding among employees in cross-functional teams decreases team effectiveness.	H5 supported
Hypothesis 6: Trustworthiness to team members, interpersonal relationship commitment and organizational citizenship behaviour decrease knowledge hiding.	H6 partially supported
Hypothesis 7a: Supportive leadership moderates the impact of interpersonal relationship commitment to team-members on knowledge hiding.	H7a rejected
Hypothesis 7b: Supportive leadership moderates the impact of trustworthiness to team-members on knowledge hiding.	H7b rejected
Hypothesis 7c: Supportive leadership moderates the impact of organizational citizenship behaviour (OCB) on knowledge hiding.	H7c supported

3.2 Discussions

3.2.1 Theoretical implications

Consistent with previous findings, the results of the current study show that antagonism has a high positive correlation with individual competitiveness (H2). Antagonism is a highly controversial personality trait because in most cases it is not visibly exhibited by respondents. Coupled with several negative aspects such as malicious deviant thinking (Lee & Dow, 2011), disingenuousness, and manipulativeness (Maples et al., 2015), most respondents would not openly show their honest intentions in anonymous situations and would rather hide their antagonism, even in written form. This can be attributed to the fact that open hostility toward the status quo can be seen as unprofessional behavior or a direct attack on superiors, leading to disciplinary action or immediate dismissal of the employee. Instead, superficially hidden, so-called counterproductive workplace behaviors (CWBs) are employed by the antagonistic person. They manifest themselves in actions that are not directly measurable, but continually undermine authority and cooperative team morale. Therefore, antagonistic individuals cannot be held (directly) accountable even though they harm their work environment and the structure (Robinson & Bennett, 1995). Typical actions include deliberately reducing work speed or rudeness in the workplace. Studies have shown that antagonism is positively correlated with CWB (Berry et al., 2007); therefore, it is reasonable to assume that antagonistic team members in cross-functional teams are more likely to act competitively and thus counterproductively.

However, the current results do not support the relationship between competitive individuals and knowledge hiding in cross-functional teams (H1);

instead, a negative correlation was found, implying that higher personal competitiveness leads to less knowledge hiding. Due to a lack of further implications, it is assumed that mainly other factors lead to knowledge hiding. Hernaus et al. (2019) suggest that knowledge hiding generally increases even in the presence of competition, but predictors such as task interdependence and social support play a leading role. Employees' perceived mistrust is also positively related to knowledge-hiding behavior (Connelly et al. 2012). Excluding these factors, it appears that in a harmonious atmosphere, individuals with higher individual competition might contribute to the fact that competitive individuals are more likely to share their knowledge in the team.

Finally, the relationship between competitive supervisors and individual competitiveness was not confirmed (H2). While previous research suggests such a relationship between a competitive supervisor and the subsequent adjustment of competitive individuals, this study shows that there is no significant relationship. Although the supervisor may have an impact on the employee, it is likely that there are other predictors that lead to whether an individual behaves competitive. First and foremost, the personal characteristics of each individual make constant and reproducible knowledge impossible. Due to individual human nature, as well as their age, experience, and mentality, individuals may react differently to the competitive attitude of their supervisor. Passive and reserved personalities might even find this type of leadership annoying or frustrating because they want to stay at their work pace and feel unnecessarily pressured by a competitive supervisor. On the other hand, some supervisors may not have the necessary leadership and social skills to effectively motivate their employees. This can result in aggressive, force-based leadership rather than cooperative and mutually complementary

skills, causing peaceful and participative individuals to remain true to their cooperative intentions and refuse to conform to the characteristics of others they despise.

This assumption can be further substantiated by two relevant results. The statistical analysis shows that, first, a competitive supervisor leads to antagonism. In particular, the strong correlation between a competitive supervisor and antagonism suggests that the environment has a strong influence on personality and behavior of the individual in teams. As mentioned earlier, this is to be expected if the competitive supervisor is not able to combine supportive leadership and mentoring with performance orientation. On the other hand, antagonism itself is the main reason for knowledge hiding, leading to lower efficiency in cross-functional teams.

In line with previous research findings, the results of the study on the perception of the individual towards the team show that moderating values, namely the interpersonal climate of colleagues and supervisor, influence the ever-increasing problem of knowledge hiding in a situation where high information and knowledge sharing is crucial. During the conducted research, competitive climate was identified as a strongly influencing variable (H3). Mandatory teamwork, as stated in the literature review, is always associated with certain difficulties, both in terms of individual members' opinions (relational conflicts) and in terms of agreement on the proposed course of action. A direct effect of mutual disapproval is the effect of knowledge hiding, which confirms the basis of this study.

However, it is important to note the distinctive feature that cross-functional teams are formed based on collaborating individuals pursuing independent agendas and an organizational framework resulting from both their corporate backgrounds and personal characteristics. Because they are made up of

different business units and include third parties (major customers, government officials, etc.), collisions of goals, methods, and interests are inevitable (Proehl, 1996).

To further understand the influencing factors, the factor dominance of team-members was considered and its influence on psychological climate was examined, analyzing its effect on knowledge hiding (H4). After multiple testing, dominance was found not to be a significant influencing factor (H4), having little effect on the competitive climate in cross-functional teams. This result was partially expected, as individuals react differently depending on their character traits and require different leadership. While traditional team environments suffer from hostility and psychological stress (Anand et al., 2020), the members of cross-functional teams are distinctly well-trained and experienced professionals who, in addition to acting on command, have had past experience with team leadership and cooperative leadership. These prerequisites, possibly complemented by strong character, may not tolerate excessive levels of aggressive or superior leadership. Age-related anomalies can also be ruled out, as innovative, wealthy startups, often consisting of a few individuals with highly diversified knowledge, reject traditional "ruler figures" who practice dominant leadership (Mihai et al., 2017).

Finally, the moderating effect of trust between competitive climate and knowledge hiding was confirmed (H4). The presence of trust allows both team leaders and team members to effectively dampen the effects and occurrence of knowledge hiding. As shown in Figure 2, this effect has limits, which means that the dangers of knowledge hiding persist, albeit in a weakened form. Moreover, it was found that even as the competitive climate increases, high levels of trust can mitigate the increase in knowledge hiding to low-to-moderate levels. Consequently, external challenges that force competition,

such as changing conditions by individual supervisors, do not pose a threat to the performance and innovativeness of cross-functional teams.

In the third part of the study on the influence of the supervisor or the cross-functional team on knowledge hiding, a series of hypotheses were formulated. Hypothesis 5 focused on the factor of team effectiveness and the decreasing effect of knowledge hiding on this factor. Cross-functional teams play a special role in the scenario studied, as they consist of people from different departments pursuing different goals and using individual methods. Cross-functional teams tasked with solving interdisciplinary problems fulfill the critical role of delivering organizationally effective results. Significant levels of knowledge hiding undermine necessary information sharing, preventing out-of-the-box thinking critical to the interplay of competencies in project teams of all types (Zhang & Min, 2019).

Preventing the possibility of knowledge hiding is thus a top priority as a leader, as negative consequences can result. Systematic knowledge retention impacts the overall organizational climate, as cross-functional teams learn, reflect, and provide feedback for the entire department in the background, rather than just remaining individual experiences. Two factors in particular suffer as a result. First, the behavior of individuals are constantly changing from knowledge seekers who actively participate and share ideas, past experiences, and methods to knowledge deniers who remain silent and resist meaningful collaboration (Chatterjee et al., 2021). Second, the absence of exclusive knowledge leads to competitive advantage being lost, projects being slowed down or even stopped indefinitely, and thus crucial project success being postponed.

In addition to the consequences, the antecedents also play an important role in the risk of increasing knowledge hiding. Hypothesis 6 focused on building a

trust infrastructure that negatively impacts the possibility of knowledge hiding. Trust is a variable that has long been associated with the concept of perception (Oosterhof & Todorov, 2009). Growing confidence and support from a shared mindset immensely enhances collaboration between individuals by facilitating personal psychological safety and improving collaboration in all circumstances. In this regard, the willingness to share knowledge crucially depends on the improvement of individuals' ability and willingness to learn by building trust (Zhao, 2022). In contrast, a constant lack of trust between employees can significantly hinder the sharing of important information and reduce the efficiency of collaboration.

Past literature suggested that a positive relationship between team members also leads to increased knowledge sharing (Li & Ma, 2014; Ma & Yuen, 2011). Surprisingly, IRC did not have a significant impact on knowledge hiding in this study. The past studies referred to distinct relationships, such as those that are virtual in nature (Ma & Yuen, 2011) or arise locally in organizations (Lin, 2008). At least these had in common that they can be distinct as they are not temporary. The peculiarity of cross-functional teams is that they are temporary, which means that they exist only for a limited time due to their nature, as by project or rehearsal. It would seem reasonable to assume that the temporary nature of cross-functional teams limits their ability to establish an IRC that can have an impact on knowledge hiding.

Using the results from Hypothesis 6, Organizational Citizenship Behavior (OCB) negates the effects of knowledge hiding when supportive leadership is applied. Organizational Citizenship Behavior (OCB) is a term that focuses on all voluntary behaviors of significance that accompany task-solving competence in everyday business (Kaur & Randhawa, 2021). Based on previous research, it has already been suggested that advanced OCB is

expressed and developed primarily through social exchanges at vertical and horizontal hierarchical levels. Focusing on active exchange between individuals is important to create an open environment of ideas and discussion that transfers knowledge to team and organizational structures. The moderator of leadership support (H7c) has the surprising effect that the correlation between OCB and knowledge hiding decreases with higher leadership support, so that when OCB is very high (+1 SD), knowledge hiding is slightly higher with higher leadership support than without. This phenomenon can probably be explained by social desirability. 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 are aimed at one's own advantage and at influencing the perceptions of others, the change in trend of moderator influence can be explained.

Overall, the dissertation provides a small perspective on the influence of maladaptive personality on knowledge hiding. It should be critically noted that this includes only a slice of personality research. Thus, maladaptive personalities are also characterized by other facets such as impulsivity, attention seeking, distractibility, irresponsibility, risk taking, and so on. Therefore, it should be kept in mind that the results regarding antagonism can be related to theoretical implications, but individuals in practice also exhibit innumerable other character traits besides this one, which can have a direct or indirect influence on knowledge hiding, OCB and competition.

3.2.2 Practical implications

Considering the results of the current study, it is hypothesized that external circumstances such as a competitive supervisor as well as personal

circumstances such as antagonistic behavior patterns and competitive orientation may lead to knowledge hiding.

While highly competitive behavior of an individual itself does not directly lead to knowledge hiding, the personal behavior of an individual can be influenced by it. It is deduced that requirements for leadership techniques and a common working atmosphere are of higher importance than additional (forced) competition among team members. The risk of increasing hostility among team members can have devastating effects on the entire organizational structure in the short to long term, while providing minimal to no benefits. Managers should focus on providing comprehensive support to their employees who work in cross-functional teams in addition to their anchor department to enable collaborative working. Harmonizing operational factors such as aligned communication channels, use of tools and techniques, and clear and sufficient team responsibilities can minimize antagonistic behavior. Aligned assessment concepts and encouragement of individual problem solving within the team help establish a shared mission and value proposition, which curbs the urge to engage in narcissistic behavior while rewarding individuals for increasing their commitment to the success of the entire team. When every team member feels equally valued and respected, collaboration based on shared respect and professionalism can override a strict focus on individual goals and find a solution that benefits everyone more than just a few. It is therefore to be expected that, especially in project teams where the goals of the anchor department and the project teams are in conflict, collaborative supervisors will lead to less knowledge being hidden.

The second practical implication is that antagonistic personality traits lead to individual competition and knowledge hiding. It is suggested that regular personality development measures can reduce knowledge hiding.

Recommended measures would be regular face-to-face meetings within the team to identify and discuss urgent matters and find a suitable solution for all. In addition, measures should be taken to allow criticism and constructive criticism from outside, as traditional top-down leadership could prevent all individual opinions from challenging the status quo, leading to a toxic and hostile environment.

The empirical results of the second study have significant implications for collaboration in cross-functional teams characterized by team members not knowing each other. First, the challenge of establishing trust in cross-functional teams must be overcome because project teams are temporary and interdisciplinary. If one team member disrupts sustainable teamwork during the project, it hinders the future progress of others because knowledge is not evenly distributed. To overcome the difficulty of competing goals from different anchor departments and supervisors, so-called harmonization processes must be introduced. While it seems obvious that these should be at the beginning of building cross-functional teams, schedules must be integrated into the daily workflow as priorities and other external factors change, as does the motivation of each team member.

Such practical implications pose serious challenges for individuals. Building trust in temporary, cross-functional teams to increase team effectiveness is often difficult. Moreover, trust is not the only characteristic of a first impression, because other factors such as competence, likeability, aggressiveness, and attractiveness also play a role in making a first impression (Willis & Todorov, 2006). Such factors can make it more difficult to build trust when the individuals first meet.

An increase in the competitive climate is a companion in cross-functional teams, so its presence must be accepted and cannot be fully eliminated.

Managers must pursue the concept of coopetition, a hybrid structural approach that enables collaboration among team members while respecting their individual maxims and goals. Competition cannot be completely eliminated, and the actions taken by decision makers must reflect this. Because cross-functional teams are made up of experts with different knowledge and personality traits who do not work together outside of these groups, tasks and interpersonal relationships clash from day one. Only adapted and personalized strategic leadership can overcome these difficulties. Although this requires more resources and time, in the long run, by building mutual respect and getting to know each other's strengths and weaknesses, project team members can build trust to combat problems as they arise. Balancing roles with a collaborative attitude on the part of the project leader allows for the promotion of a proactive problem-solving attitude rather than the hardening of boundaries.

Finally, team members' experience with cross-functional team constellations matters. While experts have immense and valuable knowledge, they may not be familiar with the dynamics of cross-functional teams. As a result, different social skills need to develop in these young experts. Finding overlaps in skills, interests, or goals can greatly enhance interpersonal exchanges between individuals. One promising method would be to pair experienced and trained individuals with newcomers to promote knowledge sharing among individuals. Consistently establishing informal communication channels and a cooperative attitude among members helps build trust structures and prevent critical conflicts before they arise. Leaders must focus on measures to create an "all for one and one for all" mindset to unlock the high problem-solving potential and innovation-driven strengths of cross-functional teams.

Based on the results of the third study, it is strongly recommended to use an industry-dependent, differentiated and adaptive leadership style as the decision-making authority in cross-functional teams. Since all team members have different rights and organizational backgrounds, it is critical to define and enforce clear boundaries and directive authority to ensure effective communication and collaboration across the team. Establishing reliable and personalized procedures that accompany each team member allows for continuous improvement of the status quo, effective executive-level decision making, and evaluation of overall team performance (Pinto-Santos et al., 2022). Inadequate leadership can spiral out of control as other factors that promote knowledge hiding take over (Xiong et al., 2021). In addition, negative characteristics such as antagonism are disruptive factors to the integrity of current and future cross-functional team projects (Ton et al., 2022b).

By focusing on mutual recognition among team members and fostering the building of a shared vision, the space for a potential buildup of knowledge hiding places can be sustainably eliminated. This tool requires moving away from an individual and egocentric view to a collective focus that can only be achieved through shared decisive leadership. Key performance indicators rely on the manifestation of a stability-oriented environment that allows for critical discussion of ideas while ensuring a resilience-based tone that accepts the abandonment of failed concepts or ideas (Zhang & Min, 2019). As technology advances, communication systems, data clouds, and online work have become the norm. However, simple implementation is insufficient, as a team-tailored learning strategy that fits the framework of the entire organization is critical to foster trust-based team learning (Yamani et al., 2022).

Methods for managers and decision makers revolve around steps to implement higher levels of perceived fairness among team members to enable attitudes

toward knowledge sharing that have positive connotations. Similarly, positive and constructive feedback can reduce the intent of cross-functional team members to engage in knowledge hiding in the first place.

Furthermore, higher levels of participation in cross-functional teams encourage individuals at all levels to interact and engage to a greater degree than with stricter, authoritarian leadership methods (Kaur & Randhawa, 2021). Drawing on models of individual employee needs, it is clear that higher fulfillment of these needs positively increases willingness to engage in decision-making processes.

Finally, cross-industry competencies need to be managed, as individual team members' backgrounds in finance, organization, routine, and communication habits differ by industry. Applied and user-friendly infrastructures, including user-friendly UX design, are known as a concept but have not yet been fully elaborated, so not only content but also methodological improvements are possible (Saleh et al., 2022). In addition, the cultural and legal frameworks that are present in networked supply chains need to be considered to enable successful knowledge transfer.

4 CONCLUSION AND RECOMMENDATIONS

4.1 Limitations and future research

Despite the many contributions of this research, some limitations must be acknowledged. First, the limitations of the methodology are discussed. Only participants in Europe were considered in the analysis of the study. Due to the significant differences in autonomy, culture, industry standards and management structures between the various geographical locations, these results only reflect the situation in the given environment; studies in other regions could lead to very different results. Regional bias cannot be ruled out

with certainty. Furthermore, this study did not focus on a single industry sector and represents a broad cross-section of industries.

Moreover, not all levels of short-term coopetition influencing factors were considered. Above all, the duality between orientation toward team goals and orientation toward individual goals plays a significant role in the short-term scope of action of all cross-functional team members. Only external respect for individual goals and internal willingness to limit individual expectations to a successful team goal without immediate gain can ensure the success of these projects.

Depending on the creative latitude required in certain areas (e.g., marketing, communications, or project management as opposed to strict manufacturing or sales environments), collaboration is expected from each member within a team much more than in other areas. A need for individually tailored and customized leadership methods is critical; standardized measures that usually work are not applicable.

Peng (2013) also shows with his results that age and knowledge hiding do not correlate directly to each other, but managers hide significantly less knowledge than employees without management responsibility. Again, this shows that the maturity of the individual, which the person is known to acquire over the years, plays a role in knowledge retention. Most of the literature agrees that age alone is not sufficient to predict knowledge hiding. It is primarily factors that have an influence on the maturity of the employee (e.g., job position with higher responsibility, level of education) that have an impact on knowledge hiding. It can therefore be assumed that age and knowledge hiding are more likely to be mediated or moderated by such factors and the outcome could change, if those peer-groups are included into the studies.

While further insights into coopetition have been gained in previous divisions (Crick & Crick, 2020), further empirical research should focus on other social science factors that influence knowledge hiding and were not considered in this study.

This includes, but is not limited to, the

Research Question 1: As organizations increasingly adopt cross-functional teams, how do strategic decision makers ensure the integrity of their organizational structures and rules?

Research Question 2: Balancing participants' interests in cross-functional teams: How are team goals and individual goals related and pursued by each team member?

Research Question 3: The essence of educational models is present in groups with both heterogeneous and homogeneous knowledge diversification. How differently does organizational behavior affect group members' willingness to synergize?

Research Question 4: What factors negate the strong positive correlation of antagonism toward individual competitiveness and knowledge hiding when the latter is negatively correlated with knowledge hiding?

4.2 Conclusion

The aim of this work was to analyze factors that hinder efficient task resolution in cross-functional teams by statistically investigating direct causal effects on the topic of knowledge hiding. First, the different phases of purposeful retention of information and knowledge were presented. The literature review revealed that several factors, mainly the perception of being antagonistic, perception of competitive supervisor behavior and the competitive climate

towards the team, could be relevant factors for deliberate knowledge hiding. Therefore, three main hypotheses were formulated. Using a questionnaire that contained items derived from recent findings on antagonistic behavior, the following core findings could be defined:

Knowledge hiding is one of the greatest potential threats to the efficiency of cross-functional teams. Antagonism seriously threatens individuals' willingness to share knowledge. Competitive behavior of supervisors influences the development of antagonism both positively and negatively, with negative experiences being significantly more dominant and thus affecting knowledge hiding. Individual competitiveness does not clearly affect knowledge sharing within the team but is hypothesized to have a highly fluctuating influence on it.

The objective of the second part of the study was to analyze three factors influencing knowledge hiding in cross-functional teams. Three main variables were statistically examined for their direct casual effects on knowledge hiding, namely competitive climate and its own moderating effects of dominance and trust.

First, the technical terms and variables used were described. Knowledge hiding is a highly developed disruptive factor in cross-functional teams, which are characterized by their heterogeneous knowledge distribution. Only consistent and supportive leadership can successfully ensure the achievement of performance goals. The literature review documented previous research on the stages of knowledge hiding in team structures. To test the feasibility of this study, the first step was to formulate the statistical relationship between competitive climate and knowledge hiding as a hypothesis. This was followed by two additional hypotheses that dove deeper into analyzing the factors influencing the research question.

The study was conducted using a self-administered questionnaire based on the findings of previous research. The following findings were collected: Cross-functional teams are based on the premise that increasing competition is associated with high levels of knowledge hiding. Although the nature of these teams makes them less likely to suffer from competitive structures, as shown in previous research, the effects of knowledge hiding can severely impact their productivity and therefore should be considered a high potential threat. In addition, the analysis of two moderating effects was considered: Dominance, indicating strict hierarchical and power-dependent interpersonal relationships, and trust, a characteristic feature of reliability between individuals. While the effects of dominance on knowledge hiding were not demonstrated, the effect of trust as a moderating factor was identified. The presence of highly established trust factors cannot prevent the risk of intentional withholding of knowledge or information, but can become an anchor in a constantly escalating competitive environment.

The goal of the third study was to analyze additional factors that positively and negatively affect or respond to knowledge hiding in cross-functional teams. Based on existing publications, several hypotheses were formulated, three of which could be verified. The methodology used includes a survey consisting of several questionnaires focusing on interpersonal relationship commitment of employees, cross-team trustworthiness, and Organizational Citizenship Behavior in combination with the moderating factor leadership. The following core findings could be defined: Knowledge hiding has a detrimental effect on the effectiveness of team structures and hinders innovation. The trust factor is one of the few effective methods for promoting knowledge sharing and bridging interpersonal conflicts, regardless of experience, authority, area of expertise or age. Supportive leadership tailored

to individual team members, as well as clear rules and tasks, help to foster organizational behavior among individuals, thus providing a solid foundation for open and unhindered knowledge sharing.

5 NEW SCIENTIFIC RESULTS

The dissertation addresses, on a psychological level, the impact on individuals' perceptions of knowledge sharing behavior in cross-functional teams. It is not the first publication to address knowledge management of teams. Nor is it the first publication to address individuals' perceptions towards others. The novelty of the dissertation lies in the research context of cross-functional teams with the specificity of coopetition, i.e., the simultaneous existence of cooperation and competition.

1. The dissertation introduces the use of coopetition of cross-functional teams. It concludes the teamwork has short, medium and long-term effects, that shape the future development of practicing organizations at the methodological and interdisciplinary levels. In the relationship between profitability and time expenditure, the most favorable ratio is found primarily at the relationship level. Factors involving the individual, management, or team can lead to great success and greater knowledge transfer between team members with relatively little effort. Novelty: This dissertation is the first to summarize the implications of cross-functional team coopetition for knowledge management behavior through a systematic review.
2. The research concludes that firstly individuals who have a high drive for competition do not tend to hide knowledge, but it is the opposite case (r =

-0.2, $p < 0.01$). Secondly, that antagonism significantly leads to individual competitiveness (r = 0.41, $p < 0.01$), but individual competitiveness is not increased significantly by a competitive supervisor (r = 0.18, $p > 0.05$). Novelty: It provides a first study of self-perceptions of maladaptive personality traits among members of cross-functional teams in competition.

3. The research shows that competitive climate leads to knowledge hiding (β = 0.37, $p < 0.01$) and interacting with trustworthiness (β = -0.07, $p < 0.01$). In contrast, the perception of dominant team members has no interaction effect. Novelty: It is the first study of perception within a cross-functional team and the impact on knowledge hiding.
4. The research provides that knowledge hiding among employees in cross-functional teams decreases team effectiveness (β = -0.48, $p < 0.01$). Both trust and organizational citizenship behavior lead significantly to lower knowledge hiding (β = -0.25, $p < 0.05$; β = -1.04, $p < 0.01$), while interpersonal relationship commitment does not (β = 0.01, $p > 0.05$). Leadership moderates the effect between organizational citizenship behavior and knowledge hiding, so high leadership weakens the effect (β = 0.01, $p < 0.05$). Novelty: First study to examine moderating influence of supervisors on cross-functional teams.

Table 10 summarizes the new scientific findings of the dissertation.

Table 10 Overview of new scientific results

Topics	**Novelty**	**Results**
Cross-functional team collaboration	First summary of implications for knowledge management behavior in cross-functional	The use of coopetition in internal and external scenarios during teamwork has short, medium and long-term effects that shape the future development of the practicing companies on a methodological and interdisciplinary level.

	team collaboration through systematic review of multiple studies.	In the relationship between profitability and time horizon, it is primarily the relationship level that is most favorable. Thus, the lever also works through improvements at the level of stronger knowledge transfer between team members
Self-perception	First study of self-perceptions of maladaptive personality traits among members of cross-functional teams in competition.	Individuals who have a high drive for competition do not tend to hide knowledge, but it is the opposite case ($r = -0.2$, $p < 0.01$).
		Antagonism significantly leads to individual competitiveness ($r = 0.41$, $p < 0.01$).
		Individual competitiveness is not increased significantly by a competitive supervisor ($r = 0.18$, $p > 0.05$).
Perception towards the cross-functional team	First study of perceptions within the cross-functional team and the impact on knowledge hiding	Competitive climate leads to knowledge hiding ($\beta = 0.37$, $p < 0.01$) and interacting with trustworthiness ($\beta = -0.07$, $p < 0.01$).
		In contrast, the perception of dominant team members has no interaction effect.
Influence of the supervisor	First study to examine the moderating influence of supervisors on cross-functional teams	Knowledge hiding among employees in cross-functional teams decreases team effectiveness ($\beta = -0.48$, $p < 0.01$).
		Both trust and organizational citizenship behavior lead significantly to lower knowledge hiding ($\beta = -0.25$, $p < 0.05$; $\beta = -1.04$, $p < 0.01$), while interpersonal relationship commitment does not ($r = 0.01$, $p > 0.05$).
		Leadership moderates the effect between organizational citizenship behavior and knowledge hiding, so high leadership weakens the effect ($r = 0.01$, $p < 0.05$).

The study also revealed the following three secondary findings resulting from the structural equation model from study I):

1. Individuals who have a competing supervisor are more likely to be antagonistic ($r = 0.48$, $p < 0.01$).
2. Individuals who have a competing supervisor are more likely to hide knowledge ($r = 0.33$, $p < 0.01$).
3. Individuals who are highly antagonistic are more likely to hide knowledge ($r = 0.79$, $p < 0.01$).

These results are obtained from the statistical equations of factors that were not directly the subject of the study but were discovered when testing the quality of the applied model.

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7 LIST OF PUBLICATIONS

The published publications on the topic of the dissertation

A. D. Ton, L. Hammerl, G. Szabó-Szentgróti (2022). Trust and Dominance: The dark side of competitive climate on knowledge hiding in cross-functional teams, *Knowledge Management Research & Practice, in review*

A. D. Ton, L. Hammerl, O. Kremer, D. Weber, G. Szabó-Szentgróti (2022). Why leaders are important for cross-functional teams: Moderating role of supportive leadership on knowledge hiding, *Problems Perspectives in Management (20)3,* p. 178 - 191, http://dx.doi.org/10.21511/ppm.20(3).2022.15

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A. D. Ton, G. Szabó-Szentgróti L. Hammerl, (2022). Competition within cross-functional teams: A structural equation model on knowledge hiding, *Social Sciences (11)1*, pp. 1 - 16 https://doi.org/10.3390/socsci11010030

A. D. Ton, L. Hammerl, G. Szabó-Szentgróti (2021). Factors of cross-functional team coopetition: A systematic literature review, *Performance Improvement Quarterly*, *in press*

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

A. D. Ton, D. Weber, L. Hammerl (2021). How coopetition of cross-functional teams become important in times of COVID-19 in carpathian basin: A Grounded Theory, *15th International Conference on Economics and Business,* pp. 810 - 834, ISBN 978-973-53-2752-1

8 DECLARATION

I hereby declare that I have written this paper myself and have not used any auxiliary materials other than those indicated. I have marked all verbatim or substantive passages as such, which are listed in the bibliography.

I hereby declare that this thesis is my own work, prepared after registration for the Ph.D. degree at the Hungarian University of Agriculture and Life Sciences Kaposvár Campus, and that it has not previously been included or submitted in any work at this or any other institution for a degree, diploma, or other qualification.

I have read the current University Ethics Policy and accept responsibility for the conduct of the procedures. I have attempted to identify all risks associated with conducting this research, have obtained the appropriate ethical and/or safety approval (if applicable), and acknowledge my obligations and the rights of participants.

Kaposvár, November 02, 2022 Anh Don Ton