08, 09, 10 e 11 de novembro de 2022
ISSN 2177-3866

INNOVATIVE BEHAVIORS CREATING BETTER RESPONSES TO CHANGE: A PERSPECTIVE OF BEHAVIORAL INFLUENCES

ANGELICA PIGOLA
UNIVERSIDADE NOVE DE JULHO (UNINOVE)

ELIANE MARTINS DE PAIVA
UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB)

PRISCILA REZENDE DA COSTA
UNIVERSIDADE NOVE DE JULHO (UNINOVE)

Agradecimento à orgão de fomento:
"This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES)"

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1. INTRODUCTION

Innovative behavior refers to pioneering behaviors and initiatives to discover opportunities for innovation (Rauch et al., 2009; Segarra-Ciprés et al., 2019), particularly in dynamic technological environments, where pressures for innovative ideas are crucial for business development. According to (Segarra-Ciprés et al., 2019), despite of innovative behaviors benefits for both individuals and firms, several questions still remain unanswered regarding behaviors that affect positively on innovations.

Prior research has investigated how numerous factors shaped innovative behavior. For example, one stream has investigated individual factors such as self-efficacy (Nisula & Kianto, 2016), motivations (Chiu, 2018), work ethics (Mussner et al., 2017), and employees attitudes (Arshad et al., 2020; Lichtenthaler, 2020). Others have investigated intra-organizational or contextual factors such as job design (Dorenbosch et al., 2005), leadership style (Norouzinik et al., 2021; Schiuma et al., 2021), organizational conflicts (Schweisfurth & Raasch, 2020), culture ((Tsegaye et al., 2019; Zhu et al., 2018), HR systems (Abstein & Spieth, 2014), or job insecurity (Van Hootegem et al., 2019). However, an interconnection among innovative behaviors is a promise field, not explored yet, for the sake of understanding innovation within firms and delve deeper into the role of employees' innovative behaviors (Rigtering & Weitzel, 2013) that lead to a better contribution to innovation performance (Segarra-Ciprés et al., 2019).

Therefore, this study concerns the literature about innovative behaviors and their relationships, perspectives, and influences. Here, innovative behaviors characterized as innovative ideas (Janssen, 2000; Norouzinik et al., 2021); collaboration-oriented behaviors (Ben Jouida et al., 2021; Chiu, 2018; Ruijter et al., 2021), experimentation-oriented behaviors (Arribas et al., 2012; Lee et al., 2004; Swailes, 2004); and innovation-performance oriented behaviors (Janssen, 2000; Norouzinik et al., 2021) are investigated to answer the research question on *how are associated the effects of these innovative behaviors?*

In this vein, the objective is to analyze empirically the mediating effect of collaboration and experimentation-oriented behavior on the relationship between innovative ideas and innovation-performance oriented behaviors. Furthermore, it is to investigate the direct effect of innovative ideas on innovation-performance oriented behaviors and the influence between collaboration and experimentation-oriented behavior on this relationship. Using a confirmatory factorial analysis (CFA) and a structural equation modeling (PLS-SEM) methods, we explore from a sample of 106 leaders in a Brazilian e-commerce firm, during a merger process, how innovative behaviors affect an environment of technologies integration, considered as innovative by the firm. It expects that innovative behaviors will positively interact to reach out innovation-performance oriented behaviors, which representing an expected and demanded behaviors in this kind of business sector.

This study first presents the theoretical framework with the analysis of the relationships between innovative ideas, collaboration, experimentation, and innovation-performance-oriented behaviors. After outlining the methodological aspects and the results presented, it ends with a discussion of the results and the main conclusions and theoretical and practical implications.

2. THEORY AND HYPOTHESIS

In this section, innovative behaviors are explored under four different perspectives: innovative ideas (Janssen, 2000; Norouzinik et al., 2021); collaboration-oriented behaviors (Ben

Jouida et al., 2021; Chiu, 2018; Ruijter et al., 2021), experimentation-oriented behaviors (Arribas et al., 2012; Lee et al., 2004; Swailes, 2004); and innovation-performance oriented behaviors (Janssen, 2000; Norouzinik et al., 2021).

2.1 Defining Innovative ideas

Innovative behaviors refer to all individual actions into organizational levels that introduce, generate and apply new ideas (Kleysen & Street, 2001; Norouzinik et al., 2021). Authors have been discussing innovative behaviors among different dimensions (de Jong & Den Hartog, 2007; Norouzinik et al., 2021; Schweisfurth & Raasch, 2020). Based on some dimensions, such as introduction, generation, and application, an employee evidence its innovative behaviors when create new ideas for difficult situations regularly using available knowledge to solve problems (Natalicchio et al., 2017; Norouzinik et al., 2021; Schweisfurth & Raasch, 2020). Innovative ideas are also considered as solutions for difficult issues, new ways of working (methods, techniques or instruments) or efforts into getting members of the organization excited about them (Janssen, 2000; Norouzinik et al., 2021). They may be individual or collective constructs representing a mode of behavior. The ability to behave individually or collectively derive from the combination of ideas and interactions between individuals (i.e., they engage in common processes and events, and share knowledge) to trigger how to do things better, creating expectation for new achievements, and fostering innovation-performance oriented behaviors. (Segarra-Ciprés et al., 2019). So, hypothesis one is *Innovative ideas has a positive impact on innovation-performance oriented behaviors.*

2.2 Collaboration-oriented behaviors as mediator

Regardless job positions or education background, each employee may contribute to innovation (Kristiansen & Bloch-Poulsen, 2010; Segarra-Ciprés et al., 2019). Thus, from a behavioral perspective innovation is fostered by employees' innovative behaviors (Griffin et al., 2007; Parker & Collins, 2010). Based on interactionist perspective (Segarra-Ciprés et al., 2019), collaboration-oriented behaviors may enhance innovative ideas among employees. Although collaboration-oriented behaviors may differ in terms of predisposition and proactiveness of each employee, and organizational context may facilitate or inhibit innovation-performance oriented behaviors (Labitzke et al., 2014; Segarra-Ciprés et al., 2019).

This perspective proposes that a link among employees' innovative ideas, organizational context and innovation-performance oriented behaviors is most strengthened when perceived stronger collaboration-oriented behaviors. In contrast, if organizational contexts do not provide support for innovative ideas, collaboration-oriented behaviors is less likely to be translated into innovation-performance oriented behaviors (Akram et al., 2020; Segarra-Ciprés et al., 2019).

Collaboration-oriented behaviors encourage employees to specify obligations of each party in advance as preparation for future performance to balance expectations and as consequence influence innovation-performance oriented behaviors (Benítez-Ávila et al., 2018; Ruijter et al., 2021). For (Latusek & Vlaar, 2018), it also called relational approach, considering that not all innovative ideas will produce innovation-performance, some collaboration-oriented behaviors may mediate totally or partially this relation to build future opportunities to innovate (Benítez-Ávila et al., 2018; Ruijter et al., 2021). Therefore, hypothesis two is *Innovative ideas has a higher positive impact on innovation-performance oriented behaviors when mediated by collaboration-oriented behaviors.*

2.3 Experimentation-oriented behaviors as a mediator

Experimentation is defined as a trial-and-error process in which each trial generates new ideas or insights on a problem (Allen, 1984; Lee et al., 2004; Shalley & Gilson, 2004; Thomke, 1998). It is essentially about practical application of an innovative idea or part of it (Hassi & Rekonen, 2018). Experimentation-oriented behaviors are critical for innovation (Hassi & Rekonen, 2018; Lee et al., 2004). For example, science discoveries (such as COVID-19 vaccines) and technologies (such as, Artificial Intelligence, Blockchain, Virtual Reality etc.) are outcomes from constant trial-and-error through which inventors systematically built up a knowledge base to develop more precise innovation-performance oriented behaviors (Thomke, 2003). They are fundamental for innovation problem-solving (Natalicchio et al., 2017) for which results are uncertain and information available is insufficient (Lee et al., 2004).

Consistent with this description, employees who select innovative ideas in which failures are likely (rather than safe ideas in which they can perform well) tend to persevere in better performance the midst of hardship in the long run than others (Dweck & Leggett, 2000). Therefore, experimentation-oriented behaviors seems to avoid likely failures (Thomke, 1998) increasing the level of innovation-performance oriented behaviors. Additionally, failures avoidance can be explained by interpersonal or social costs of failure (Lee et al., 2004). Specifically, failures show up gaps in expertise, skills or knowledge of employees involved in innovative ideas implementation (Lee, 1997) and avoiding failures employees enhance their professional image among colleagues (Wolfe et al., 1986).

Experimentation-oriented behaviors also affect "employees' psychological safety" (Edmondson, 2003) who are potentially concerned with risks of failure and want to increase the engagement of others in innovative ideas affecting in a certain level for a better innovation-performance oriented behaviors. They are an important mediator to trigger innovation-performance oriented behaviors when there is an innovative idea to implement. Thus, hypothesis three is *Innovative ideas has a higher positive impact on innovation-performance oriented behaviors when mediated by experimentation-oriented behaviors.*

2.4 Innovation-performance oriented behaviors and the intertwined relationship of collaboration and experimentation

Despite of innovative behaviors benefits for both employees and firms, there are still unanswered questions about their effects on innovation-performance oriented behaviors. A behavioral interactionist perspective (Oldham & Cummings, 1996; Segarra-Ciprés et al., 2019; Woodman et al., 1993) assume employees personal factors and organizational contexts might enhance or inhibit creativity and innovation at work or further employees' contributions to innovation performance. On this basis, a perceived support for innovation-performance oriented behaviors may be dependent on formalization of innovation process as informal and formal control factors that may shed light on the consequences of employee innovative behaviors on innovation performance (Segarra-Ciprés et al., 2019).

Therefore, experimentation and collaboration-oriented behavior are mediators intertwined between innovative ideas and innovation-performance oriented behaviors because first, experimentation-oriented behaviors are related to sensitivity towards uncertainties of innovative ideas, remaining sensitive to them by using stronger innovation-performance oriented behaviors. Second, the ability to identify the smallest and fastest action in collaboration to performance in innovations passes by producing and extracting the wanted learning through information from the experiment that is valuable for the innovative idea on hand or the future ones. These two perspectives, implementing learning and idea adaptation may be interpreted as learning actions

that foster more precise innovation-performance oriented behaviors bringing new information back to new innovative ideas in a meaningful way (Hassi & Rekonen, 2018).

Additionally, exploring individual characteristics to promote experimentation-oriented behavior, some authors (Hassi & Rekonen, 2018) pointed out thinking styles (interaction between abstract and concrete, mental resilience, unattached exploration, opportunity-focused continuous reflection), personality traits (intellectual humility, being opportunity-focused, action-oriented, courage) and experimentation skills (sensitivity towards uncertainties, knowing how to design valuable experiments, extracting learning, implementing learning and idea adaptation) which are characteristics more efficient in collaborative contextual conditions (Segarra-Ciprés et al., 2019) when employees may enhance or inhibit their innovation-performance oriented behaviors at work (Woodman et al., 1993). Therefore, hypothesis four is *Experimentation-oriented behaviors influence positively collaboration-oriented behaviors* and hypothesis five is *Collaboration-oriented behaviors influence positively experimentation-oriented behaviors*

3. METHOD

We employ two criteria considered important to identify the relationship among our variables to confirm the hypotheses. First, we choose employees in senior and middle management level who are users and leaders to integrate current technologies with new ones. Second, to address domains in which technologies often are used jointly with other users, the expectation is to analyze how innovative ideas, collaboration and experimentation-oriented behaviors are associated with innovation-performance oriented behaviors. (Schweisfurth & Raasch, 2020).

3.1 Sample

From September to October 2021, the data collection happened from a Brazilian e-commerce firm, in merger process, responsible for managing internal and external knowledge to facilitate integrability and innovativeness of new digital technologies for its operational processes. Although, the practice of using digital technologies to conduct the business was not new, but it was the first time the firm engages itself in vast number of innovative projects in technological integration. Innovative ideas affect digital technologies integration considered as an innovation by the senior leaders, and innovative behaviors are essential since the new technologies in place to be implemented have never used before.

Hence, employees responsible for projects implementation phases participated via survey questionnaire. All questions were originally in English being translated to Portuguese from instruments already tested before in the literature (Brislin, 1986). The process to minimize any translation errors was a PhD in English language first translated all the questions into Portuguese. An advance professional English speaker then translated the English into Portuguese. At this time, the two bilingual translators discussed the differences and made necessary changes to the Portuguese version as of comparison of both translations to the original questions offers. During a virtual workshop related to technological integration processes, 220 employees received instructions and a link to fill out the online survey; Only 106 validated responses considering that part of the team preferred not answer the survey. Table 1 presents participants' description.

3.2 Statistic Methods Applied

Based on the conceptual model and hypotheses proposals, the analysis identified a relationship among the constructs. For this reason, to improve the explanation and predictive power of the proposed model, a structural equation modeling (PLS-SEM) method is adopted

(Hair et al., 2009), as it is the most appropriate method to deal with formative variables. Although there are limitations to using PLS-SEM, for example, the results tend to overestimate the loading items (Lambdas [λx and λy]) and underestimate the path coefficients (Betas [β] e Gamas [Γ]) plus the coefficient of determination (R^2). Using covariance matrices also has limitations, for example, the results tend to overestimate structural relationships and underestimate item loading (Lambdas) which suggests that PLS-SEM provides a test of hypothetical relationships (Ernst et al., 2010).

Table 1. Descriptive Statistics about participants

Age		
	Percentage	**n**
Less than 25 years old	22.64	24
26 to 35 years old	60.38	64
36 to 46 years old	16.98	18
46 to 55 years old	0.00	0
above 55 years old	0.00	0
Time of service in current job position		
Less than 1 year	41.51	44
1 to 3 years	46.23	49
4 to 6 years	9.43	10
7 to 10 years	1.89	2
Above 11 years	0.94	1
Level of technological Knowledge		
No Knowledge	0.00	0
Low level	6.60	7
Medium level	51.89	55
High level	31.13	33
Very High level	10.38	11

Previous studies indicate that PLS-SEM weaknesses are strengths of covariance matrices and vice versa (Hair et al., 2012), and given the nature of our data (non-standard), PLS-SEM is adopted because it is already widely accepted and used in studies published in academic business journals (Akram et al., 2020; Bolander et al., 2015; Norouzinik et al., 2021) and innovation management (Cautela et al., 2021; Klein et al., 2021). Amos SPSS 26 software tests measurement and path models. Internal consistency is assessed by examining Cronbach's alpha and composite reliability score, with values greater than 0.70, indicate strong internal consistency (Streiner, 2003). Convergent and discriminant validity through confirmatory factor analysis (CFA) supports AVE examination and correlations between the constructs.

Harman's single-factor test avoids common error bias in JASP 0.15 software. It consists of conducting an important non-rotating component of the factor analysis in which a single dimension grouped all indicators. The literature indicates that the Harman single-factor test (Aguirre-Urreta & Hu, 2019) is the most used to verify the variance of the common method (Podsakoff et al., 2003), probably because of the simplicity of its operation. By this methodology, the common method variance is not significant if the total variance explained by the single unrotated factor is less than 50% of the total variance of the scale. Furthermore, all the others extracted factors account for approximately 64.1% of total variance. Hence, the collected

data were without bias, and the explained variance not diverted. No particular concern in the data. Findings of the validity test, reliability test, and hypothesis testing are in the results section.

The protocol of procedures adopted to adjust the model followed the sequence proposed (Ringle et al., 2020), i.e., (a) observation of factor loadings; and (b) multicollinearity; (c) internal consistency (Cronbach's alpha) and composite reliability (CR); (d) convergent validity (average variance extracted - AVE); (e) discriminant validity – Fornell and Larcker (1981) criterion (e) Pearson's determination coefficients (R^2) and (f) values and path coefficients significance.

3.3 Measures

Standard measures from previous studies were employed to quantify the variables. Scores of variables were on a five-point Likert scale ranging from 'Completely Disagree = 1' to 'Completely Agree = 5.' The analysis of variables was at an individual level. Innovative ideas was measured through a combinative items scale proposed by (Janssen, 2000; Norouzinik et al., 2021). A sample item is 'I always support innovative ideas for difficult issues.' Cronbach's alpha was .824 for this scale. Experimentation-oriented behaviors was measured through the three-item scale proposed by (Swailes, 2004). A sample item is 'I like to experiment different technologies and work practices.' Cronbach's alpha was .823 for this scale. Furthermore, to collaboration-oriented behaviors a test questionnaire of (Chiu, 2018) was used. A sample item is 'I mobilize support to promote innovative ideas.' Cronbach's alpha was .825 for this scale. Innovation-performance oriented behaviors was measured consisting in innovative ideas generation, promotion, and implementation (Janssen, 2004) and idea transformation into useful applications (Norouzinik et al., 2021). A sample item is 'I assess usefulness of innovative ideas before and after implementing them' Cronbach's alpha was .821 for this scale. In previous studies, others researchers assessed employees' opinions on innovative supervisors' behaviors and others employees' positions, being the results reliable in these cases (Akram et al., 2020; Janssen, 2000, 2004, 2005; Li & Hsu, 2016; Norouzinik et al., 2021; Schweisfurth & Raasch, 2020).

4. FINDINGS

The measurement models and the relationships between the latent and observed variables is the prerequisite of this section by demonstrating findings of CFA and PLS-SEM. Table 2 presents the constructs reliability statistics results, showing factor loadings, mean, standard deviations, AVE, CR, and Cronbach's alpha, for all the variables indicate that the measurements are appropriate. The mean for all the variables is greater than three. Table 3 presents CFA results for all the variables and the goodness of fit index (GFI) was .761 ($p > .001$) confirming the appropriateness of the model.

Three different PLS-SEM models evaluated the hypotheses. First model, called innovative ideas model, tested the direct effect of innovative ideas on innovation-performance oriented behaviors and mediation roles of collaboration and experimentation-oriented behaviors on innovation-performance oriented behaviors to confirm Hypothesis 1, 2 and 3. Second model, called collaboration model, tested the mediation effect of collaboration-oriented behaviors on innovation-performance oriented behaviors when influenced by experimentation-oriented behaviors to confirm Hypothesis 4. Third model, called experimentation model, analyzed the mediation effect of experimentation-oriented behaviors on innovative-performance oriented behaviors when influenced by collaboration-oriented behaviors to confirm Hypothesis 5.

Table 2. Constructs Reliability Statistics

Item		Cronbach's α	Mean	SD	AVE	Composite Reliabity
Innovative Ideas (Janssen, 2000; Norouzinik et al., 2021)						
CRI1	I always support innovative ideas for difficult issues.	.824	4.264	.820		
CRI2	I research new working methods, techniques, or instruments	.825	4.009	.878	.676	.862
CRI3	I put effort into getting key members of the organization excited about innovative ideas	.817	3.840	.958		
Experimentation-oriented behaviors (Swailes, 2004)						
CRE1	I challenge the way of doing things.	.833	3.802	.888		
CRE2	I suggest efficiency and quality improvements.	.819	4.368	.785	.681	.865
CRE3	I like to experiment with different technologies and work practices.	.823	4.377	.710		
Collaboration-oriented behaviors (Chiu, 2018)						
CRC1	I mobilize support to promote innovative ideas	.825	4.151	.814		
CRC2	I make improvements for the use of modern technologies (creation of manuals, newsletters, and documents)	.829	4.047	1.055	.676	.862
CRC3	I use facts and logic to convince my colleagues on how to use recent technologies that can improve our professional lives.	.812	4.189	.896		
Innovation-performance oriented behaviors (Janssen, 2000; Norouzinik et al., 2021)						
CRD1	I turn innovative ideas into useful applications or activities	.812	3.821	.882		
CRD2	I introduce innovative ideas into the workplace in a systematic way	.817	3.491	.908	.706	.878
CRD3	I assess the usefulness of innovative ideas before and after implementing them	.821	4.113	.820		

Table 3. Confirmatory Factor Analysis results

						95% Confidence Interval	
Factor	Indicator	Std. Est.	Std. Error	z-value	p	Lower	Upper
Innovation Ideas	CRI1	.587	.146	3.272	.001	.192	.766
	CRI2	.467	.115	3.536	***	.182	.635
	CRI3	.465	.162	2.741	.006	.126	.759
Experimentation-oriented behaviors	CRE1	.444	.102	3.838	***	.192	.594
	CRE3	.507	.093	3.848	***	.176	.541
	CRE2	.852	.122	5.455	***	.427	.905
Colaboration oriented behaviors	CRC2	.714	.223	3.362	***	.313	1.187
	CRC3	.354	.120	2.622	.009	.080	.551
	CRC1	.516	.126	3.331	***	.172	.664
Innovation-performance oriented behaviors	CRD1	.762	.087	7.721	***	.499	.838
	CRD2	.693	.095	6.566	***	.439	.813
	CRD3	.556	.095	4.754	***	.267	.641

*** = p > .001

Table 4 shows the three fitted models with all direct and mediation effects of the variables. In the first analysis, innovative ideas model showed that innovative ideas have positive effects on innovation-performance oriented behaviors but not significantly (β = .314, p = .221) confirming partially Hypothesis 1. It also has positive effects on collaboration-oriented behaviors (β = .832, p < .001), and experimentation-oriented behaviors (β = .453, p <.001). Collaboration-oriented behaviors, as mediator, increase the impact of innovative ideas on innovation-performance oriented behaviors (β = 1.022, p = .007) confirming Hypothesis 2. On the other hand, experimentation-oriented behaviors as mediator have a negative impact on innovation-performance oriented behaviors (β = - .0,43, p = .900) but not significantly, not confirming hypothesis 3.

In the experimentation model, innovative ideas have positive effects on collaboration-oriented behaviors (β = .962, p < .0131), and experimentation-oriented behaviors (β = .486, p = .002). However, experimentation-oriented behaviors negatively influence collaboration-oriented behaviors, but not significantly (β = -.135, p = .730), not confirming hypothesis 4. Additionally, experimentation-oriented behaviors in mediation role have a positive impact on innovation-performance oriented behaviors (β = .071, p =.843), but not significantly as well. Collaboration-oriented behaviors in mediation role when received influence of experimentation-oriented behaviors has a significant positive impact on innovation-performance oriented behaviors (β = 1.328, p > .001).

In the collaboration model, innovative ideas have positive effects on collaboration-oriented behaviors (β = .861, p < .001), and experimentation-oriented behaviors (β = .386, p = .027). Yet, collaboration-oriented behaviors influence positively experimentation-oriented behaviors but not significantly (β = .113, p = .674) confirming partially hypothesis 5. Collaboration-oriented behaviors in mediation role also increase the impact of innovative ideas on innovative- performance oriented behaviors (β = 1.321, p < .001). Experimentation-oriented behaviors as mediatior when received influence of collaboration-oriented behaviors has a positive impact on innovation-performance oriented behaviors (β = .070, p = .844) but not significantly.

Table 4. Structural estimates of the structural model

Summary of Models			Innovation Ideas			Experimentation			Collaboration		
			Est	Std. Est	pvalue	Est	Std. Est	pvalue	Est	Std. Est	pvalue
Collaboration	←	Innovative Ideas	.832	1.392	***	.926	1.409	.013	.861	1.293	***
Experimentation	←	Innovative Ideas	.453	.655	***	.486	.690	.002	.386	.550	.027
Innovation-performance	←	Collaboration	1.022	1.000	.007	1.328	1.000	***	1.321	.771	***
Innovation-performance	←	Experimentation	- .043	- .026	.900	.071	.044	.843	.070	.043	.844
Innovation-performance	←	Innovative Idea	.314	.279	.221						
Collaboration	←	Experimentation				- .135	- .144	.730			
Experimentation	←	Collaboration							.113	.108	.674

*** p < .001.

Table 5 presents the results of fitness for the three PLS-SEM models. Three distinct kinds of goodness-of-fit indices verified the model's validity. The first model has absolute indices, including x^2/df (1.523) and RMSEA (.071). (Wheaton et al., 1977) suggested that the normalized Chi-square values of lower than five would be adequate. The root means a square error of approximation measure also indicated that the model had a satisfactory goodness-of-fit (Hair et al., 2012). The second and third model include equal relative indices such as the comparative fit

index (CFI = .915), the normalized fit index (NFI = .802), and the incremental fit index (IFI = .920). (Hu & Bentler, 1999) suggested that CFI, NFI, and IFI scores above .90 were satisfactory. For parsimony indices, including the normalized parsimony fit index (PNFI = .583) for collaboration model and (PNFI = .584) for experimentation model. Parsimony goodness-of-fit index (PGFI = .550) for which were bigger than .50 leading to a satisfactory model fit. It confirmed from the following fit indices, the fitted models' overall validity.

Table 5. The results of the model-fit

Models	df	χ 2	χ2/df	NFI	IFI	CFI	RMR	PNFI	PGFI	RMSEA	pvalue
Innovation Ideas	48	73.088	1.523	.805	.923	.919	.053	.586	.550	.071	.011
Experimentation	48	74.122	1.544	.802	.920	.915	.053	.584	.550	.072	.009
Collaboration	48	74.173	1.545	.802	.920	.915	.053	.583	.550	.072	.009

Figure 2 depicts, in the three models, collaboration-oriented behaviors as mediator increase the impact of innovative ideas on innovation-performance oriented behaviors corroborating with studies of (Ruijter et al., 2021) who study collaboration and trust in megaprojects practices and (Ben Jouida et al., 2021) who mention that the collaboration conditions for a given firm are analytically derived according to the sharing method and behaviors considered and used to enhance innovative solutions approach. Other authors (Chen et al., 2021) also highlighted, through latent profile analysis, four collaborative profiles including restricted collaboration profile, smarmy collaboration profile, intuitive collaboration profile, and modest collaboration profile as a behavioral-oriented strategy to innovate. However, our finding does not corroborate with (Pastra et al., 2021) who mention that collaborative behavior did not predict any dimension of performance, in a board level.

Experimentation-oriented behaviors do not affect significantly collaboration-oriented behaviors neither innovation-performance oriented behaviors in neither of the three models corroborating with (Arribas et al., 2012) who mention that there is empirical evidence that experimental behaviors (characterized by detecting an opportunity and acceptance of its risk) reduces the incentive for social behavior where collaboration is highly important. However, this effect does not appear if just self-perceptions instead of experimental behaviors. Trying to understand some nuances of experimentation behaviors, (Lee et al., 2004) suggested that experimentation behavior requires examining effects of multiple organizational conditions in combination.

5. DISCUSSION

This study analyzed innovative behaviors and their direct and mediators' relationships. Due to the hypotheses testing results, innovative ideas have a positive direct impact, but not significantly, on innovation-performance oriented behaviors confirming partially hypothesis one. Therefore, innovative ideas are dependent on others' behaviors, such as, collaboration-oriented behaviors to become more effective, confirming hypothesis two. The results of testing about experimentation-oriented behaviors as mediators demonstrate a negative impact on innovation-performance oriented behaviors not confirming hypothesis three.

These relations can be explained because even experimentation-oriented behaviors being crucial for innovation (Hassi & Rekonen, 2018; Lee et al., 2004), they are more connected with failures avoidance acting direct on employees' psychological safety" (Edmondson, 2003) against their gaps in expertise, skills or knowledge involved in innovative ideas implementation (Lee, 1997), and less associated with innovation-performance oriented behaviors that may be

dependent on formalization of innovation process as informal and formal control factors that may shed light on the consequences of innovative behaviors on innovation performance (Segarra-Ciprés et al., 2019).

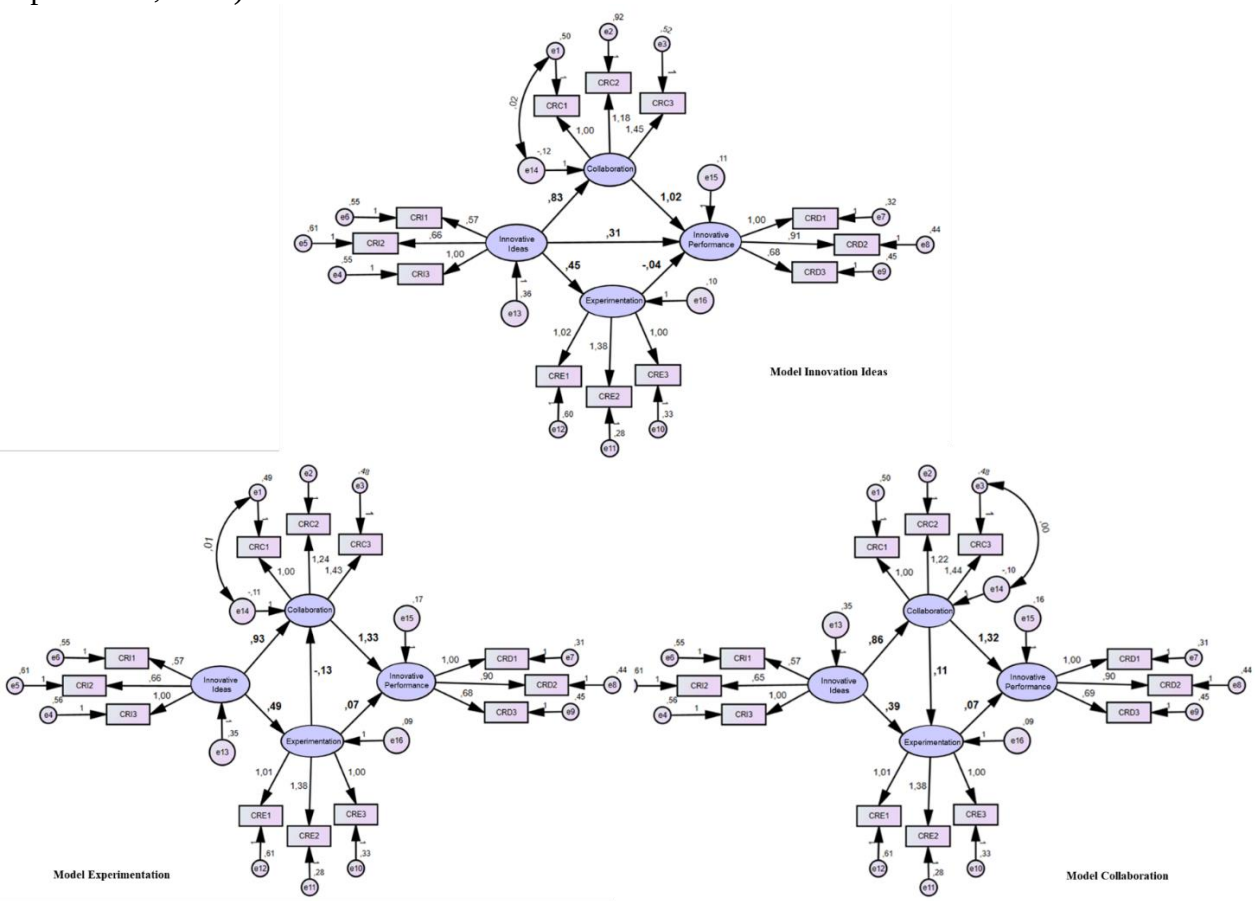

Figure 2. PLS-SEM - The three structural and estimation models

On the hand, collaboration-oriented behaviors are more related to predisposition and proactiveness of each employee contributing differently according to organizational context regardless risk acceptance of innovation ideas, job position or education levels facilitating innovation-performance oriented behaviors (Labitzke et al., 2014; Segarra-Ciprés et al., 2019). It means collaboration behaviors are more perceive on idea promotion stage striving to remove organizational resistance and barriers to bring change (Akram et al., 2020; Shane, 1994) which may improve innovation-performance oriented behaviors.

Understanding the relevance of collaboration and experimentation-oriented behaviors on organizational level due to firms' capacity to solve innovation problems in fast and dynamic pace and scale, the fourth and fifth hypotheses investigated the relationship of these two behaviors on innovation-performance oriented behaviors, showing that experimentation behaviors are not positively associated with collaboration not confirming hypothesis four. However, collaboration-oriented behaviors are positively associated on experimentation but not statistically significant confirming partially hypothesis five.

This results may be explained by effects of multiple organizational conditions in combination (Lee et al., 2004), beyond employees' thinking styles, personality traits and skills (Hassi & Rekonen, 2018), that may enhance or inhibit their innovative capacity to performance

well at work (Woodman et al., 1993). It means that experimentation or collaboration-oriented behaviors are totally related to organizational contexts and psychological aspects and their positive association will be also dependent on these two aspects. In other words, the time when the correspondence or incompatibility between organizational and individual goals to innovate are more prominent and these incompatibilities generate behavioral resistance to change or innovate (Schalk et al., 1998), neither collaboration nor experimentation will affect each other because of the context and psychological aspects.

5.1 Theoretical Implications

The results showed how employees' innovative behaviors, their interactions and characteristics could increase their effectiveness on innovation performance. In fact, employees lay the innovative ideas based on their behavioral relationships. When an employee strives an innovative idea, he or she needs to equally interact with other employees in collaboration to feel confident that any experimentation or testing support or development, when needed, will receive attention from the organization. Therefore, according to the interactionist perspective, behaviors complement themselves in an association of trust, relational capacity, openness on organizational contexts to prosper any innovative ideas and see innovation performance fostered. And from this perspective, the study answered the research question showing on how are associated the effects of innovative behaviors into a dynamic environment highlighting the critical role of relational capacity and personality traits on collaboration and experimentation-oriented behaviors (Ang et al., 2015; Blayone et al., 2020; Hassi & Rekonen, 2018; Thomas et al., 2018). Additionally, this behavioral evidence is also relevant to create future institutions, relationships, systems, and processes that are different from the past providing more consciousness about behavioral impacts on business.

5.2 Practical Implications

According to the findings, it provides suggestions for practical implementation. Initially, since developing and stablishing an atmosphere of collaboration to innovate, it is proper an alignment and integration to manage contradictions, exercising intellectual humility in dealing with challenges. Moreover, leaders need to attribute success to external factors, as well, and take responsibility for undesirable or unpredictable situations. Hence, it is essential to work for improvements of behavioral characteristics and perspectives through self-awareness of personal values and personality traits in moderating negative behaviors associated risks inherent of innovative ideas. This an answered for what behaviors and skills will firms and leaders of the future need to attend ongoing transitions when they desire to innovate. Second, although a variety of basic and advanced technical skills remain vital to innovate, firms highly dependent on technologies, should be aware about technology enthusiasm and learning interest should be recognized as key behaviors supporting the ongoing professional development requirements of dynamic, digitalized work (Blayone et al., 2020). Finally, considering today's economies. cultural and diversity orientations emerging as relevant sociopsychological forces (alongside employees' personality traits and behaviors) which also shape organizational dynamics (Thomas et al., 2018), innovation-performance oriented behaviors should combine technological and relational process which are expected to interact with contexts dispositions in more predictable ways (Ang et al., 2015; Blayone et al., 2020).

6. CONCLUSION AND LIMITATIONS

This study pursued an understanding of interactionist perspective about innovative behaviors required in a digital transformation environment from a Brazilian e-commerce firm. This scenario allowed to identify behavioral characteristics considered highly associated with innovation in emerging dynamics of digitalized work. From this perspective, the behavioral literature related to innovation offered a detailed vision to an aggregated new behavioral dynamics establishment to rethink relationships among innovative behaviors in how firms, managers, and stakeholders can develop and enhance these innovative behaviors to anticipate and agilely respond to new challenges related to innovation performance.

Due to the statistical sample size and the difficulty of collecting information longitudinally in various stages, cross-sectional research is another limitation of the study. Therefore, it is important to study the relationships between research variables longitudinally and at separate times in future research. Also, there may be an inverse relationship between variables considered as a suggestion for future research. Finally, this study provided useful information about behavioral factors which can foster the technology implementation performance within organizations and how to take care of employees' behavioral aspects to work closely together in the future.

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