

Transformational Leadership and Acceptance of Mistakes as a Source of Learning: Poland-USA Cross-Country Study.

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Abstract: This study aims to explore the influence of transformational leadership on internal innovativeness mediated by mistakes acceptance, including country and industry as factors to be considered and gender and risk-taking attitude as moderators. General findings, primarily based on the US samples (healthcare, construction, and IT industry), confirmed that transformational leadership and internal innovativeness are mediated by mistakes acceptance and strengthened by employees' risk-taking attitude. It is reflected in Polish healthcare sample. On the other hand, IT and construction industry samples revealed that a low mistakes acceptance level among risk-taking managers under transformational leadership might be their hidden form of change resistance. Regarding gender issue, this study showed that male employees driven by transformational leaders accept mistakes as a source of learning better than women, but the exceptions are healthcare and IT industries in Poland. The developed empirical model is based on a sample composed of 2,160 Polish and American knowledge workers applying OLS regression, using SPSS PROCESS macro software.

Keywords: transformational leadership, risk, acceptance of mistakes, learning culture, gender, internal innovativeness

1. Introduction

"Leadership is a multi-level circumstance between an individual leader and individual followers, followers' groups, and groups of followers' groups (Su, Wang, and Chen, 2020)." Style of leadership is one of the key factors for organizational changes. A person who encourages individuals to accept the change, to adapt and accept the new ideas by setting specific aims, is called a leader (Harb and Sidani, 2019). As the companies are working in a very predictable setup, the management of an organization has become an overly complex and challenging task. Nowadays, perfect and successful leadership has become a very important component of running a successful business in which a leader has explicit knowledge about the complexities of the setup. The leader also needs to identify and meet the needs of organizational investors so that they can achieve the goals effectively and efficiently (Alsayyed *et al.*, 2020).

Transformational leadership is the style of leadership that creates awareness among individuals to achieve the specific goals set by an organization (Harb and Sidani, 2019). "Transformational leaders are those who promote teamwork, respect among public and cooperation among employees to achieve the specific organizational goals." It has been reported that transformational leadership has a positive impact on the efficiency of the employees. It is a type of partnership that is formed on the basis of confidence, appreciation and respect among leaders and followers (Khan *et al.*, 2020). Recently, transformational leadership has attracted the huge interest of researchers. It has been reported that leaders have the capability to steer individuals in a specific direction to attain specific goals of an organization (Begum *et al.*, 2020).

Organizational transformation is a vital component in the world of industry. So, to expand competitiveness and secure their status in the market, companies should make changes in their policies and go through the process of transformation. "Organizational transformation is the shift of the organization from their present status to desired future status (Harb and Sidani, 2019)."

In the state of innovation, transformational leadership is thought to be a perfect style to take steps aimed at transformation in organizations. Transformational leadership has the capability to promote a good and healthy environment for its employees to innovate (García-Morales, Jiménez-Barrionuevo and Gutiérrez-Gutiérrez,

2012). It has been reported in various studies that women possess diverse leadership qualities as compared to men (Kabacoff and Stoffey, 2001; Kim and Shim, 2003; Eagly, Johannesen-Schmidt and Van Engen, 2012).

It has been reported that transformational leadership has a significant effect on organizational learning. Various studies have been carried out to indicate the positive effect of transformational leaders to develop the learning habits in the employees of an organization (Wallace, Tomlinson and O'Reilly, 2011; Haiyan, Walker and Xiaowei, 2017). So, transformational leaders are the core of organizational learning culture development.

Transformative Learning Theory (Mezirow, 1995) claims that adult learning happens thanks to modified interpretations of the meanings of personal experiences and frames of reference through critical reflection. Critical reflection results from "intuitively becoming aware that something is wrong with the result of our thought, or challenging its validity through discourse with others of differing viewpoints and arriving at the best-informed judgment" (Mezirow, 1995, p. 46). So, considering this, learning from mistakes, thanks to critical thinking, seems vital for organizational competency to determine innovativeness. However, several studies proved that acceptance of mistakes fosters innovativeness (Kucharska, 2021a-c; Kucharska and Rebelo, 2022), and thus mistakes are significant for organizational development. In some industries and national cultures contexts they remain controversial as an official source of organizational learning, however, in others they are not. This makes mistakes an interesting subject of studies.

Mistakes acceptance component of learning culture is proved to be a vital influencer of change adaptability (Kucharska, Bedford, 2020), tacit knowledge awareness and sharing, intellectual capital development and innovation performance (Kucharska, 2021a-d; 2022). Also, Weinzimmer and Esken (2017), Horvath et al. (2021), Klamar et al. (2022) stressed that organizational system and culture supporting learning from mistakes might be an interesting source of organizational value, if responsibly managed. Therefore, this study is a simplified replication of Kucharska and Rebelo's (2022) study of transformational leadership influence on mistakes acceptance for innovativeness based on higher education in other sectors: healthcare, construction, and IT. Replication is vital for science development. The general value of replication is the opportunity to verify the replicated research findings. Precisely, the closer the replication research findings are to the replicated study findings, the more likely those results can be generalized to the larger population. Therefore, the studies being replication of the existing research are generally appreciated. But there is also the added value to this replication; this study aims also to verify whether the national cultural context is significant for mistakes acceptance and gender issues by comparing findings between two countries: Poland and the US.

2. Hypotheses

Transformational leaders are the agents of change (Bakari et al., 2017). They make brave organizational ideas and visions a reality, create strong bonds with employees, motivate employees, and provide support and inspiration (Busari et al., 2019; Domínguez-Escrig et al. 2022). Executives who can transform their organizations and adapt them to change, perform smoothly and deliver outstanding results (Kantor et al., 2008). Such leaders often lead changes through developing organizational culture (Brandt et al., 2019; Lee et al., 2018; Ibrahim et al., 2022) that is potent enough to promote knowledge, learning, and innovativeness (Kucharska, 2021a-d). This study refers directly to Kucharska and Rebelo's (2022) findings about learning culture which revealed that tacit knowledge sharing and change adaptability driven by learning culture are vital links connecting transformational leadership with innovativeness. Furthermore, what is the most interesting for this study - they exposed that the influence of the mistakes' acceptance component of learning culture on tacit knowledge sharing is moderated by gender. Following them, this study aims to verify how gender issue moderate the mistakes acceptance component of culture driven by transformational leaders in other sectors. Summing up, this study is a simplified replication of Kucharska and Rebelo's (2022) study based on higher education in other sectors: healthcare, construction, and the IT sectors. Therefore, based on Kucharska and Rebelo's (2022) study, the hypotheses included in the proposed research are formulated as below:

H1: Transformational leadership has positive influence on internal innovativeness.

Hm1: Transformational leadership and mistakes acceptance relation is moderated by gender.

Hm2: Transformational leadership and mistakes acceptance relation is moderated by gender that is moderated by country.

H2: Mistakes acceptance positively affects internal innovativeness.

H3: Transformational leadership's positive influence on internal innovativeness is mediated by mistakes acceptance component that is moderated by gender and country.

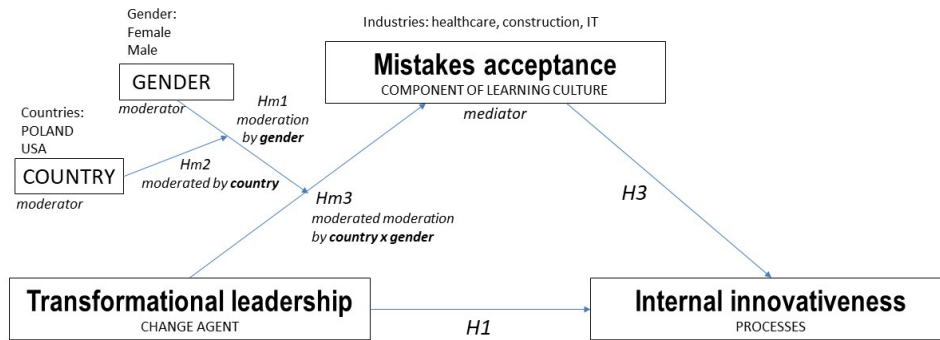


Figure 1: Hypothesized model

3. Method

The empirical model was tested on a sample composed of 2,160 Polish and American knowledge workers applying OLS regression using SPSS PROCESS macro software (Hayes, 2018). To do so, the samples were obtained from survey (January - February 2020) using mostly Likert scales to measure attitudes (Appendix 1). Composite variables were created to apply SPSS PROCESS and dummy variables were used to analyze moderators. The questionnaire included filter questions to establish minimum work experience and status as a “knowledge worker”. Where comparable, the sample generally matched the underlying populations (jobs, gender) of both countries (Polish Yearbook, 2017; Bureau of Labor Statistics, 2020). While some differences were apparent in the underlying populations, they were not significant enough to justify varying the quota targets. The Polish quota structure was used as a pattern for samples for both countries.

4. Results

Results confirm that mistakes acceptance component of learning culture complementarily mediates between transformational leadership and internal innovativeness and that gender and country moderate this relation for the IT and construction industry. The exception is noticed for the healthcare industry, where the country is a significant moderator, but gender is not observed to be one (details in Table 1; Figures a-c).

Table 1:

Hypothesis	β	t	p	verification
H1	.29/.18/.21	9.2/6.96/8.41	.000/.000/.000	supported/supported/supported
Hm1	.36/.61/-.63	1.42/3.05/-3.58	.15/.002/.004	rejected/supported/ supported
Hm2	.32/-.35/.39	2.94/-2.66/3.12	.05/.008/.0018	supported/supported/supported
H2	.11/.25/.30	4.19/8.35/9.28	.000/.000/.000	supported/supported/supported
H3	-0.04/ -.09/ .12	HEALTHCARE -.024(LLCI), 0.09(ULCI)/ CONSTRUCTION -.17(LLCI), -0.16(ULCI)/ IT .045(LLCI), 0.21(ULCI)		supported/supported/supported
Models' Summary		R R-sq MSE F df1 df2 p		
	HEALTHCARE	.3288 .1081 1.8760 12.2442 7.0000 707.0000 .0000		
	CONSTRUCTION	.3924 .1539 1.0232 64.7762 2.0000 712.0000 .0000		
	IT	.4763 .2268 1.0388 105.6060 2.0000 720.0000 .0000		

Note: sample size: **healthcare/construction/IT n=722/715/723**; standardized estimates, LLCI–low limit confidence interval; ULCI–upper limit confidence interval

Furthermore, Figures 2a-c illustrate that in terms of gender effects for the US, for both groups, female and male acceptance of mistakes is more robust if transformational leadership is stronger. Precisely, the stronger transformational leadership, the stronger acceptance for mistakes, and this dependence is noted for all industries included in the study for the US ((a) healthcare, (b) construction, (c) IT).

The results for Poland are similar for healthcare industry but gender-related differences are observed in the construction and IT industries. Precisely, in the construction industry (Fig. 2b), there is a decrease in women's mistakes acceptance level if transformational leadership is stronger, whereas in the case of men an increase is observed – similarly to the pattern noted for the healthcare industry in US and Poland. Regarding IT industry, the results for Poland are opposite to those of the construction industry – if transformational leadership is

stronger, there is a decrease in men's mistakes acceptance level and an increase in women's acceptance level (Fig. 2c).

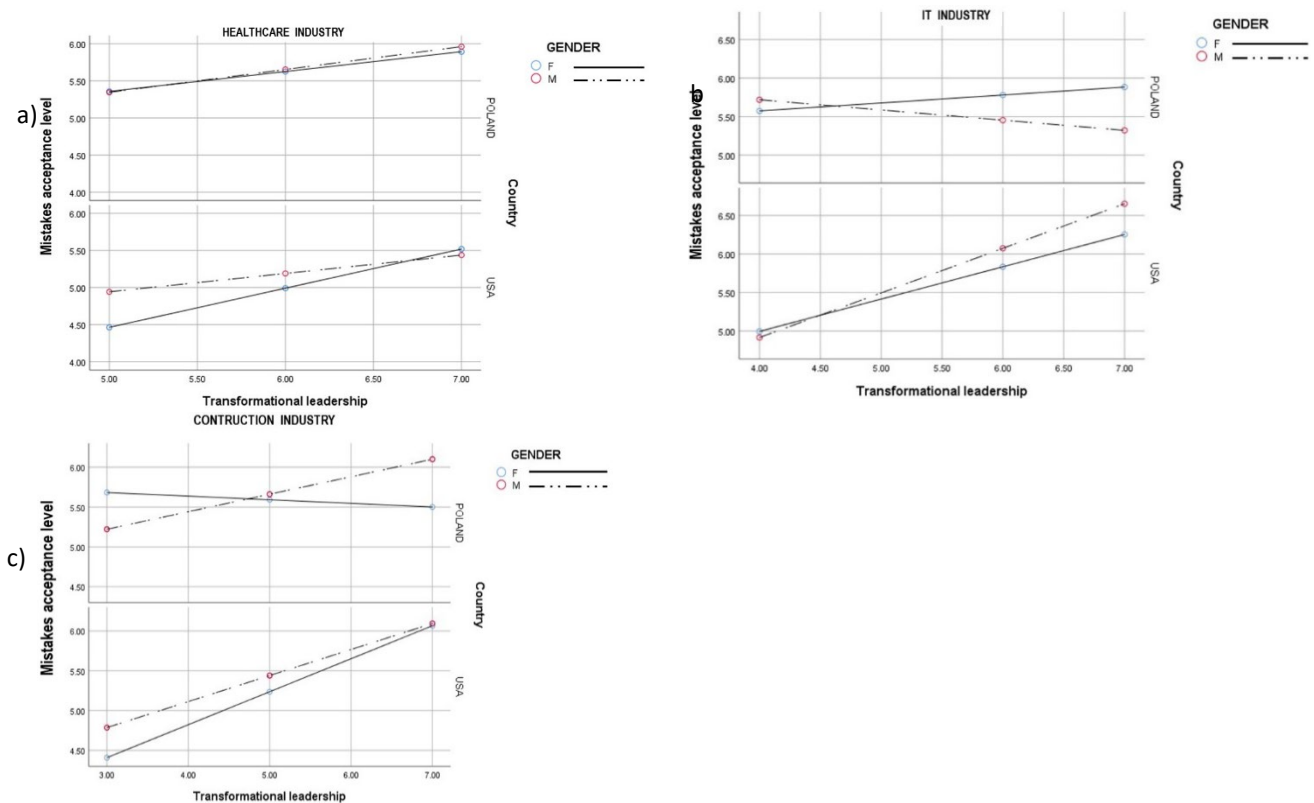


Figure 2: Transformational leadership influence on mistakes acceptance POLAND-US view by gender and industry, a) healthcare, b) construction, c) IT

Note: Level of confidence for all confidence intervals in output: 95.0000. Number of bootstrap samples for percentile bootstrap confidence intervals: 5000. W values in conditional tables are the 16th, 50th, and 84th percentiles. Sample size: healthcare/construction/IT n=722/715/723.

As it was observed that the influence of transformational leadership on mistakes acceptance level differs significantly among genders for the IT industry in Poland, the presented findings were next explored more in-depth. Specifically, the “risk” factor was incorporated into the study and it was considered a significant moderator for the gender reaction to mistakes (Fig. 3a-b). Risk-taking attitude implies uncertainty acceptance (Zinn, 2020). Thus, if a mistake is conceptualized as the lack of the desired results because “something went wrong”, then the risk logically includes the acceptance of mistakes that occur when risk actions are taken and also of the negative outcomes of the particular risk (Cannon and Edmondson, 2001; Politis and Gabriellson, 2009). Furthermore, to be mentally ready to be wrong, the person must feel comfortable and safe in facing uncertainty and risk in front of others (Andersson et al., 2020). Therefore, the “risk taking attitude” factor has been included in the study to verify if it differs among genders and somehow explain the observed differences.

Indeed, for the US, the risk is of significance for the mistake's acceptance – the higher risk acceptance level, the higher mistakes acceptance level driven by the transformational leadership observed for both gender groups. Based on this, the verification whether the risk acceptance attitude differs among men and women in the IT industry sample in Poland is justified. Precisely, based on dependencies between included variables observed for the US sample, it is expected that women's attitude towards risk in the IT industry in Poland is lower than men in the same industry so the influence of transformational leaders on women's attitude towards mistakes acceptance should be higher than in case of men. Figure 3 below presents the results obtained.

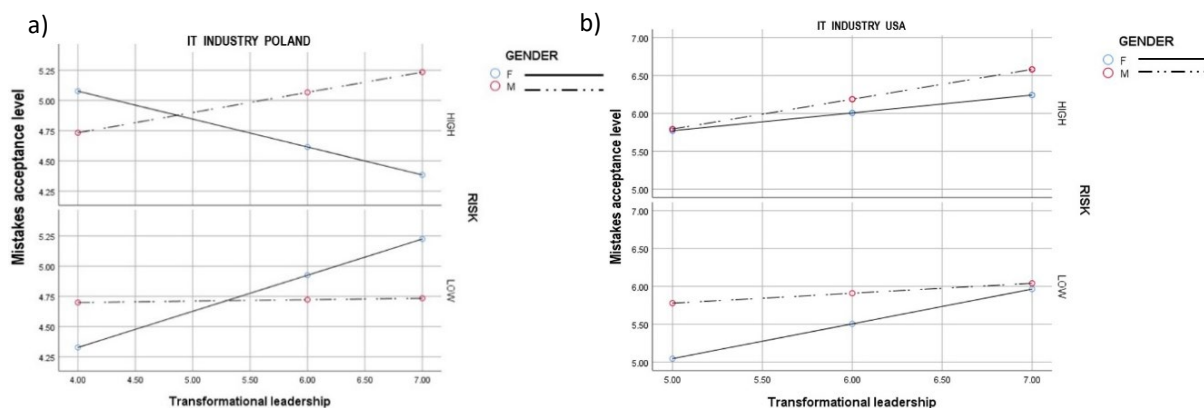


Figure 3: Transformational leadership influence on mistakes acceptance by gender and risk in the IT industry a) POLAND b) USA

Note: Level of confidence for all confidence intervals in output: 95.0000. Number of bootstrap samples for percentile bootstrap confidence intervals: 5000. W values in conditional tables are the 16th, 50th, and 84th percentiles. Sample size Poland/US n=350/378

Again, the results for Poland are contrary to what was expected. Specifically, the effect observed for the US, namely the higher risk, the higher the mistakes acceptance level, in Poland is observed only for men. The reaction of women with high-risk attitudes is opposite: their level of the mistake’s acceptance level decreases when stimulated by transformational leaders. But in case of women with risk-acceptance attitude at lower level, transformational leaders stimulate their mistakes acceptance, while this effect is neutral for men. These findings again require the deeper consideration. Therefore, further deeper analyses were performed including the factor of “position” held by the respondents. Kucharska and Kowalczyk (2019) proved that the position factor matters for the perception of some phenomena within organization. Specifically, for this research, it is expected that women on higher positions in the IT are characterized by a higher level of risk-acceptance. Thus, “gender” and “position” factors might be tied with the “risk acceptance factor” and help understand the noted differences. This assumption has been verified by the analysis of the focal factor frequency in the Polish IT sample. The tables showing the frequency of the explored factors in a sample were created for the IT industry in Poland and presented below (Figures 4a-b).

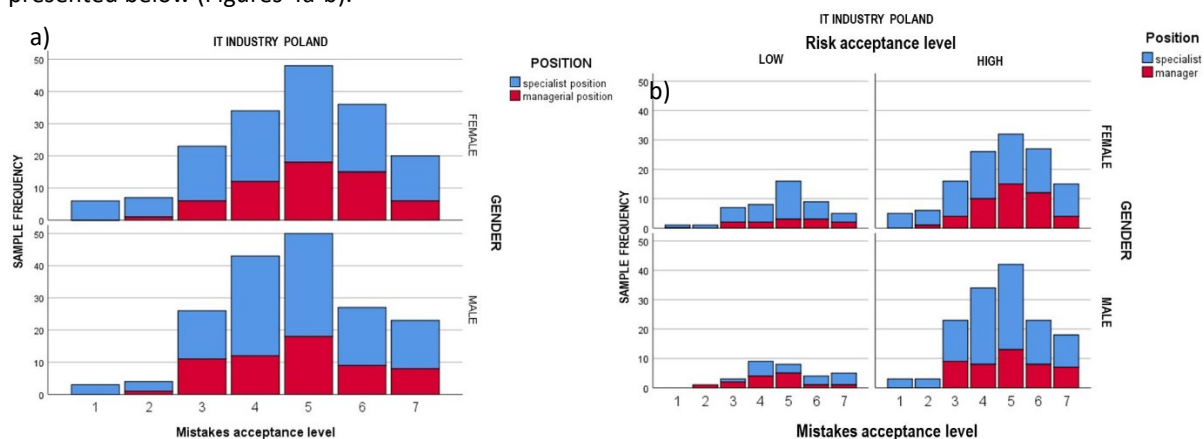


Figure 4: Mistakes acceptance level frequency by a) gender and position, b) gender, position, risk

The tables of frequency showed no significant differences between genders regarding the frequency of mistakes acceptance levels in specialists or managers. However, when risk-to-frequency analysis is included, it is seen that in the high-risk acceptance group of employees, women managers’ risk attitude is higher than that of women specialists, and for men the situation is opposite: specialists show higher risk-taking perspective than managers, relatively to the position distribution in the sample. Therefore, at first glance, the explored revelation seems to be caused by a risk-taking attitude, but the frequency analysis shows that it is not. Since the risk-taking attitude dominates in the Polish IT sample, female managers are more willing than male managers to take a risk. They mistake acceptance level increase when transformational leadership is strong (precisely: the higher level of transformational leadership the higher level of mistakes acceptance is observed). In the IT industry, male

managers' reaction to strong transformational leadership is opposite even if their attitude towards risk is positive. So, considering all findings presented, male managers in the IT seem to be change blockers as they intentionally or not (consciously or unconsciously) decrease acceptance of mistakes.

5. Discussion, limitations, and further research

The findings of Kucharska and Rebelo (2022) proving that transformational leadership increase the acceptance of mistakes as a source of learning is generally confirmed. However, some differences have been noted regarding the current samples. Specifically, Kucharska and Rebelo (2022) revealed that the effect is stronger for women than for men. The results presented are generally opposite to all samples from the US and one from Poland – the one for the construction industry. Similar results to those of Kucharska and Rebelo (2022) are noted for the healthcare industry, where gender effects are equal, and for the IT industry, where women accept mistakes more willingly than men. These findings are similar to those of Kucharska and Rebelo (2022), but quite different than majority of findings given in this research. Therefore, a more in-depth analysis was performed. Precisely, the decreasing acceptance of mistakes by men in the IT industry in Poland seemed to be caused by a risk-taking attitude (based on the US IT sample pattern, Fig. 3b). However, the sample frequency analysis showed that it is not. The risk-taking attitude dominates among men in the polish sample, so the attitude toward risk can't cause the observed low level of acceptance of IT men's mistakes. Therefore, there is a need for a different, better explanation.

So, to find the understanding, the given findings were discussed with three high-level polish IT professionals. And considering their opinions and all the conclusions presented, male managers in IT seem to be change blockers as their reaction to strong transformational leadership is decreasing acceptance of mistakes even if their risk acceptance is high. In other words, the potential risk of mistakes can be used here to discourage any transformation or change implementation. Mistakes acceptance decrease seems to be used here as a rationalized (consciously or not) form of change resistance. It is a hypothesis post-hoc and, the verification of this hypothesis requires further studies.

Other findings worth to be discussed, it is differences among industries concerning on transformational leadership influence on mistakes acceptance in the country context. This influence is most vital for the IT sector ($H3 \beta=0,12 p=.0000$) and more robust in the US than in Poland, and additionally oppositely directed. It suggests that there is a different mindset between IT knowledge workers in Poland than in the US who seem to be more open to changes. Besides, regarding the doubly moderated by gender and country factors of mediated effect of mistakes acceptance level between transformational leadership and internal innovativeness it is confirmed for all sectors ($H3$), but it is positive only for the IT. The double moderation is also confirmed for all samples ($Hm2$); it is positive for IT and healthcare, and it is negative only for the construction sector. So, it suggests that construction industry sector requires deeper further studies to understand transformational leadership, innovativeness, and mistakes acceptance issues. All the more so as Kucharska (2021c) noted that such organizational factors as hierarchy and maturity issues also matter for organizational learning from mistakes. Those factors were not included in this research.

The study also has other limitations. It is conducted only certain industries. In addition, the sample profile has recognizable patterns in terms of size distribution of companies (e.g. the US IT companies are big, whereas Polish ones are small; Polish healthcare companies are public, whereas in the US they are private). Finally, the study is conducted in two different types of nations, but still only two. So, scientific implications suggest that these studies should be expanded to other nations and industries.

6. Practical implications

In today's modern knowledge-based age, there is a need for innovative leaders who can address a knowledge-based environment and encourage growth to improve organizational sustainability. Based on this research, we learned that transformational leaders affect the underlying attitudes and assumptions of on organization's members, resulting in a shared mindset for achieving the company's objectives, which is in line with previous studies (Kucharska and Rebelo, 2022). According to our findings, such effective leadership always results in greater efficiency. Our study aimed to assess the transformational leadership and acceptance of mistakes as a source of learning. The presented results indicate that mistakes acceptance, a component of the learning culture, complementarily mediates between transformational leadership and internal innovativeness. So, from

the practical point of view, the leaders' attitude towards mistakes as a source of learning shapes the organizational attitude in this regard.

So, to improve the efficiency of an organization, solid transformational leadership and a higher level of mistakes acceptance are required. The search for new possibilities, a shared vision as well as staff motivation and direction will be possible through transformational leadership and self-improvement in whatever people at work are engaged in. Employees are more proactive, and their intelligence is enriched if they are motivated to think and critically analyze their mistakes. It is seen that transformation leaders positively impact business outcomes by spotting mistakes and strengthening social relationships. Moreover, innovative leadership strengthens the strong connection or association between the leader and subordinates, allowing subordinates to go far beyond the average standards and thus achieve above-average effects. As seen in the study, the acceptance of mistakes in both female and male groups is more robust if transformational leadership is strong. It is, because transformational leadership inspires individuals to go above and beyond needed requirements to work toward a common goal and embrace mistakes along the way, it centers on individuals who are extrinsically motivated for the particular job duties. Leaders and businesses may achieve their maximum potential by learning to combine those traits. This is projected in the construction industry in the study where women's mistakes acceptance level decreases if transformational leadership is more robust. The same is observed in the IT for men. It is possible that these groups are more internal than externally motivated or, as we hypothesized before, a low mistakes acceptance level among risk-taking managers driven by transformative leaders in the IT and construction industry might be a hidden form of change resistance. It is one of the easiest ways to block the change by escalating potential risks of mistakes or failures resulting from the particular change implementation and their consequences in business practice. As we stressed - this idea requires further studies. But so far, it is an important warning for business practice: the fear of making mistakes might be a severe development blocker.

7. Conclusions

Generally, the findings primarily based on the US samples (healthcare, construction, and IT industry) confirmed that mistakes acceptance mediates transformational leadership and internal innovativeness and that it is strengthened by the employees' risk-taking attitude. It is reflected in the Polish healthcare sample. Nevertheless, the IT and construction industry samples revealed that a low level of mistakes acceptance among risk-taking managers driven by transformational leaders might be their hidden form of change resistance that requires further studies. Regarding gender issue, this study exposed that men employees driven by transformational leaders accept mistakes as a source of learning better than women, but the exceptions are healthcare and IT industries in Poland. To sum up, this study revealed that mistakes acceptance component of learning culture, country, industry, gender, and risk factors matters for transformational leadership's effective influence on internal innovativeness. Furthermore, mistakes acceptance component of learning culture is related to gender, industry and country (national culture).

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Appendix 1: Scales applied

Construct	Items
Transformational leadership Yi <i>et al.</i> (2019)	<ul style="list-style-type: none"> • The firm's management is always looking for new opportunities for the organization. • The firm's management has a clear view of its final aims. • The firm's management succeeds in motivating the rest of the company. • The firm's management always acts as the organization's leading force. • The organization has leaders who are capable of motivating and guiding their colleagues on the job.
II: Internal innovations Kucharska (2021a), Kucharska and Erickson (2022)	<ul style="list-style-type: none"> • we constantly improve the way we work • we are good at managing changes • we are highly disposed to introduce new methods and procedures • we are highly disposed to accept new rules
LCM: mistakes acceptance Kucharska and Bedford (2020)	<ul style="list-style-type: none"> • People know that mistakes are a learning consequence and tolerate it up to a certain limit. • Most people freely declare mistakes. • We discuss problems openly without blaming. • Mistakes are tolerated and treated as learning opportunities.