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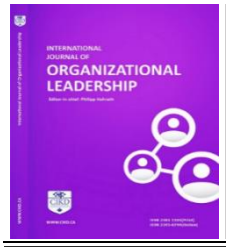

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The Mediating Role of Financial Needs in the Impact of Green Transformational Leadership on Innovative Behavior and Digital Transformation

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ABSTRACT

As environmental sustainability, digital transformation, and innovation become increasingly critical organizational priorities on a global scale, the transformative role of leadership in these processes has gained prominence. In this context, green transformational leadership is recognized as a key driver of organizational transformation, not only through its environmentally focused strategic orientation but also through its ability to shape employee behaviors. This study aims to examine the impact of green transformational leadership on digital transformation and innovative behavior, while exploring the mediating role of employees' financial needs. The research was conducted with data collected from 426 employees of small and medium-sized enterprises operating in Giresun and Kars provinces. Employing a quantitative research design, the study utilized structural equation modeling and conducted comprehensive analyses of scale validity, reliability, and mediation tests. The findings reveal that green transformational leadership has a significant and positive effect on both digital transformation and innovative behavior. Furthermore, financial needs were found to partially mediate the relationships between these constructs. The results indicate that leadership support, when reinforced by perceptions of financial security, yields stronger outcomes in cognitively demanding processes such as digital transformation and innovation. Based on these findings, it is emphasized that organizations should approach green leadership practices not only from an environmental sustainability perspective but also by integrating them with employee well-being and digitalization capabilities. The study provides practical and theoretical contributions to the literature by holistically addressing the interaction between green leadership and financial needs in the context of digital transformation and innovative behavior.

In an era where environmental sustainability has become a priority at both societal and organizational levels, leadership paradigms are being reshaped to align with this transformation. Moving beyond traditional leadership approaches, Green Transformational Leadership (GTL), which develops environmentally sensitive strategies, emerges as a management approach that internalizes environmental values, encourages employees to adopt green behaviors, and contributes to organizational sustainability (Demir et al., 2025). An increasing number of studies highlighting the influence of GTL not only on fostering environmental awareness but also on employees' innovative behaviors and adaptation to Digital Transformation (DT) underscore the multifaceted role of this leadership style. In accordance with World Economic Forum (2023) data, 61% of global companies plan to invest more in leadership roles to address the climate crisis. This reflects a growing sensitivity toward environmentally conscious leadership, positioning GTL as a focal point of interest.

On the other hand, Innovative Behaviors (IBs) refer to strategically significant actions through which individuals generate, advocate for, and implement novel ideas in work processes (Sagbas et al., 2023). According to an OECD (2015) report, workplaces identified as innovation-friendly exhibit 25% higher employee engagement and 32% greater job satisfaction. Furthermore, the same report indicates that innovative employees are 45% more likely to contribute to organizational productivity compared to their non-innovative counterparts. These findings highlight the critical and strategic role of fostering innovation in achieving success in digital transformation processes within the contemporary business landscape, where digitalization is intensifying. DT is defined as a multidimensional process encompassing not only technological infrastructure investments but also human factors such as organizational culture, leadership style, and employee engagement (Oktaysoy et al., 2022). Global investments in DT are projected to run into USD 3.4 trillion by 2026. However, it is emphasized that 70% of DT initiatives fail due to organizational resistance and adaptation challenges, underscoring the critical role of human factors alongside technological advancements in DT (Businesswire, 2022). Moreover, for transformation processes to function effectively, employees' fundamental needs must also be addressed. In this regard, Financial Needs (FNs) emerge as a key factor directly influencing an individual's quality of life, organizational commitment, and productivity. According to the PricewaterhouseCoopers (2024) Financial Wellness Survey, 57% of employees report difficulty focusing on work due to financial concerns, and 47% state that financial stress directly impacts their job performance. In environments where financial security is inadequate, employees struggle to align with leadership visions, disengage from innovative ideas, and exhibit resistance to digital adaptation (Tziner et al., 2019).

This study aims to examine the relationships between four complementary elements of organizational success-green transformational leadership, innovative behavior, digital transformation, and financial needs-within a holistic framework. In line with this objective, inspired by Resource-Based View Theory, it is considered that financial needs must be met in order to mobilize employees, who are one of the organization's strategic resources. Employees' financial needs may become more important than other variables in supporting leadership for organizational transformation, but previous studies have not adequately highlighted financial needs. While variables such as job satisfaction and job performance have been important variables in previous studies, financial needs have only been considered a motivational factor (Bano et al., 2022; Chen et al., 2014; Demir et al., 2025; Oktaysoy et al., 2025). Indeed, it is

necessary to consider not only the impact of leadership on innovation and digitalization processes, but also the economic factors that shape this impact. The Paris Climate Agreement's zero-emission pressure on countries is returning to organizations in the form of carbon taxes. Organizations are turning to digital transformation to reduce carbon taxes (Demir et al., 2025). Considering previous studies, it is estimated that more than 70% of digital transformation projects will fail or not fully deliver the desired results (Dhall & Kanungo, 2023). Pessimistic estimates indicate that 90% of digital transformation programs worth $1.3 trillion annually will fail (Ramesh & Delen, 2021). The study is valuable in that it offers a different explanation for failure. It is anticipated that examining whether financial needs play a mediating role in these relationships could have significant implications, both in terms of theoretical contribution and in providing a strategic perspective for practitioners. In this regard, the study can be said to differentiate itself from other studies in the literature and take on a unique character.

Literature Review

Theoretical Background

The study draws on three different theories: Transformational Leadership Theory (TLT), Maslow's theory, and Resource-Based View (RBV) theory. Transformational leadership theory models how a leader's behavior inspires employees to perform above their capabilities. On a theoretical level, GTL is built upon the dimensions of TLT (Bass, 1985), with these dimensions reinterpreted by integrating environmental values. In this regard, the leader's positioning as an environmental role model and the integration of employees into environmentally conscious decision-making processes are among the distinguishing features of GTL. Additionally, the alignment of values between leaders and employees is noted to facilitate the shaping of an organizational climate oriented toward green principles (Fernandes & Machado, 2021).

FNs are typically categorized into the short- and long-term needs. The former focuses on covering daily expenses, bill payments, and addressing sudden cash flow shortages. The latter includes broader financial goals such as retirement security, investments, business capital requirements, and strategic growth plans (Kim et al., 2019). In the literature, these needs are classified similarly to Maslow's hierarchy of needs, encompassing basic survival needs, growth needs and security needs, with each level represented by different financial instruments (Xiao & Anderson, 1997). Maslow's theory states that an individual's personality development is shaped by the nature of the need category that is dominant at that moment (Maslow, 1943). From this perspective, it is thought that financial needs will also affect other variables within the scope of this study.

In this study, it would be appropriate to evaluate the IB and DT variables within the framework of the Resource-Based View (RBV) theory. Within the scope of this theory, employees and the digital technologies owned by the organization are evaluated as strategic resources and play an important role in providing a sustainable competitive advantage. In this study, it is thought that the leader will achieve success by influencing IB and DT in the organization's green transformation based on the RBV theory. This idea is consistent with the literature and emphasizes that transformation is not only a process but also a cultural and managerial restructuring, which makes the study important.

In conclusion, the integration of the three different theories into the study provides a solid theoretical framework for the model developed in this study. These theories support the

necessary formation to explain the mediating role of financial needs in the impact of green transformational leadership on innovative behavior and digital transformation.

Green Transformational Leadership

The concept of GTL has been established in the literature as a reinterpreted version of classical transformational leadership, aligned with environmental objectives (Oktaysoy et al., 2025). GTL can be defined as a holistic leadership style that not only pursues organizational goals but also promotes the adoption of environmental values and encourages environmentally responsible behaviors (Ayandibu, 2019). At its core, GTL focuses on enhancing employees' environmental awareness and fostering the internalization of green behaviors. This leadership approach aims to mobilize employees around an inspiring vision, support eco-friendly innovations, and cultivate a shared consciousness regarding environmental sustainability (Demir et al., 2025).

Key factors influencing the effectiveness of GTL include the leader's identification with environmental values, organizational culture, employees' environmental identity levels, and the human resource policies adopted within the organization. Studies have shown that green human resource practices and green innovation processes significantly mediate the effect of GTL (Sun et al., 2022). Moreover, psychological factors such as green mindfulness have been found to enhance the effectiveness of this leadership approach (Tongsoongnern & Lee, 2023).

Financial Needs

From an employee perspective, FNs are directly related to an individual's capacity to cover essential living expenses, maintain economic security, and achieve future plans (Loscalzo et al., 2023). These needs include obligatory expenses such as housing, food, healthcare, education, and transportation, which vary based on income levels, as well as longer-term economic goals like saving, debt repayment, retirement planning, and protection against financial risks (Kiymaza & Öztürkkal, 2019). As such, FNs are considered a fundamental factor influencing psychological well-being and quality of life.

The extent to which employees' FNs are met influences not only economic stability but also psychosocial factors such as organizational commitment, job satisfaction, stress levels, and overall life satisfaction (Yousaf et al., 2014). In environments where employees grapple with financial concerns, productivity declines, error rates increase, and employee turnover accelerates. Consequently, employees with financial well-being exhibit increased productivity and creativity, stronger workplace loyalty, and more frequent organizational citizenship behaviors (Kiymaza & Öztürkkal, 2019).

Digital Transformation

DT is described as the process of integrating digital technologies with business operations, value creation processes, and organizational cultures, fundamentally restructuring these elements (Tang, 2021). This transformation encompasses not only the digitization of existing processes but also the blooming of novel business models, the adoption of data-driven strategic decision-making, and the redefinition of customer value. As such, DT is viewed as a comprehensive and holistic organizational change driven by the strategic usage of information and communication technologies (Kraus et al., 2022).

At the organizational level, DT has become a critical factor in sustaining competitive advantage, enhancing customer experiences, refining operational efficiency, and establishing agile decision-making processes (Karafakioglu & Afacan Findikli, 2024). The effective use of digital technologies has led to the widespread adoption of data-driven management approaches, with these technologies driving transformation in business processes. This transformation involves not only technological investments but also social components such as human resources and organizational culture (Schilirò, 2024).

Innovative Behavior

IB refers employees' voluntary and proactive actions in generating, advocating for, and implementing new ideas related to work processes (Oberer & Erkollar, 2018). In the literature, IB is considered a product of individual effort aimed at generating organizational benefits and is regarded as a rudimentary component of organizational innovation (Sagbas et al., 2023).

IB is typically conceptualized as a multidimensional process comprising four key stages: idea implementation, idea championing, idea generation, and idea exploration (De Jong & Den Hartog, 2010). Idea exploration refers to finding new ways or thinking of alternatives to improve existing products, services, or processes (Lukes & Stephan, 2017). The concept of idea generation involves combining or reorganizing existing ideas to solve problems within an organization and improve performance (De Jong & Den Hartog, 2010). After the discovery and generation of an idea, championing the idea is a very important stage. Innovative behaviors may encounter many obstacles, particularly resistance to change. From this perspective, it is necessary to emphasize the benefits of the idea, particularly in terms of cost, and to defend the idea (Steyn & Bruin, 2019). In the final stage, ideas are expected to be implemented by integrating innovations into business processes and maintaining a continuous search for innovation (De Jong & Den Hartog, 2010). The functioning of this process is influenced by both individual and organizational factors. On an individual basis, psychological characteristics such as self-efficacy, intrinsic motivation, creative thinking ability, and autonomy orientation have been shown to support IB (Papachristopoulos & Arvanitis, 2024). At the organizational level, factors such as leadership styles, organizational climate, supportive work environments, and human resource practices are noted to foster IB.

Development of Hypotheses

The Relationship Between GTL and FNs

GTL encourages employees and helps them develop individually by using an inspiring motivation process. As a result, within the framework of RBV Theory, employees are viewed as the organization's indispensable and most valuable resource, thereby enhancing the organization's performance and providing a competitive advantage. In a study conducted by Haile (2024) in Ethiopia, it was found that GTL had a significant impact (ß = .63) on the organization's financial performance. In a study conducted by Özgül & Zehir (2023) in Turkiye, it was found that GTL had a moderate level (ß = .41) impact on the organization's financial performance. In a similar study by Alay et al. (2024), it was found that GTL affects the financial performance of the organization at a low level (ß = .25). Previous studies in the literature have focused more on the financial performance of the organization, without taking into account the financial needs of employees. It is expected that an increase in the organization's financial

performance will also be reflected in the performance of its employees. Indeed, Abourokbah et al. (2024) state that GTL is more successful when it provides sufficient financial and social support to its employees and that achieving the organization's objectives becomes easier. Based on this, H_1 has been formulated.

H_1: GTL has a significant positive effect on FNs.

The Relationship Between FNs and DT

Leaders assigning the process solely to a special team prevent DT from spreading throughout the entire organization and limit responsibility to only that team (Papathomas & Konteos, 2024). DT that does not spread throughout the entire organization cannot be successful. Du and Wang (2024) state that DT is greatly influenced by the personal characteristics of leaders. Based on TLT, it is necessary for leaders to engage with employees individually and ensure their support for DT. In this context, it is believed that leaders will guide and motivate employees by acting as role models, making employees feel valued and resolving their financial concerns (Bass, 1985). The model presented suggests that both employees and the organization will benefit. Although there are no studies in the literature evaluating these two variables, it can be said that they exist in practice. The increasing DT process in organizations is also evident in automobile sales in Turkey, where automobiles are produced according to customer demand, even during the production stage, buyers are kept informed, and vehicles are delivered to customers within a few weeks. Yüce Auto, the distributor of the Skoda brand in Turkey, will distribute 12 months' salary as a bonus to all its employees in 2020, 13 months' salary in 2021, 25 months' salary in 2022, and 29 months' salary in 2023, demonstrating that sharing the organization's increasing profits with employees also increases profitability (Habertürk, 2024). In short, successful digital transformation increases the profitability of an organization, which in turn increases employee salaries and ensures that their financial needs are met. Based on this, H_2 hypothesis was formulated.

H_2: Employees' FNs have a significant positive effect on DT.

The Relationship Between GTL and DT

One of the biggest obstacles to DT is the lack of leadership within the organization, which results in the organization not being strategically guided, leading to unsuccessful or inefficient transformation (Cuevas-Vargas, 2025). GTL is viewed in the literature as an effective solution for DT, addressing both DT and interest in green issues (Alabdali et al., 2024). In light of RBV Theory (Barney, 2001), leaders are expected to serve as role models, positively influencing employees in terms of DT. It is expected that the leader's support for employees and the creation of a clear vision will result in the spread of DT from top management to the grassroots level within the scope of RBV theory. In a study conducted by Seema et al. (2025), it was found that the effect of GTL on DT was significant ($\beta = .95$). It can be said that the result obtained is much higher than expected, but it is important in terms of providing an idea. The fact that there is only one study in the literature focusing on the two variables in question makes the contribution of this study to the literature even more valuable. In this context, H_3 hypothesis was formed.

H_3: GTL has a significant positive effect on DT.

The Relationship Between FNs and IB

It can be argued that ensuring financial security is an important step in generating innovative ideas, based on Maslow's (1943) hierarchy of needs. When an organization meets the financial demands of its employees to satisfy their basic needs, employees develop innovative behaviors in the self-actualization stage. Kiymaza and Öztürkkal (2019) found that low levels of financial satisfaction among employees are associated with a decrease in innovative behavior. Employees who cannot meet their financial needs will constantly think about their debts, which will reduce their commitment to work (Kaygin et al., 2023). Based on this, H_4 hypothesis was formed.

H_4: FNs have a significant positive effect on IB.

The Relationship Between GTL and IB

Studies on GTL are generally shaped by TLT. From this perspective, leaders inspire employees through motivation, idealized thoughts for the environment, and intellectual stimulation, thereby promoting IB (Zhu et al., 2022). Employees' innovative ideas are disseminated through leaders, motivating their subordinates to express their ideas and encouraging creative thinking within the organization (Moustafa Saleh et al., 2024). Many studies have been conducted based on TLT in the literature. In a study conducted by Wang et al. (2025), a moderate relationship (ß = .32) was found between GTL and IB. In a study conducted by Sobaih et al. (2022), it was determined that GTL has a high level (ß = .72) of effect on IB. In the study conducted by Demir et al. (2025), it was found that GTL has a significant effect (ß = .80) on IB. Based on the studies in the literature and transformational leadership theory, H_5 hypothesis was formulated.

H_5: GTL has a significant positive effect on IB.

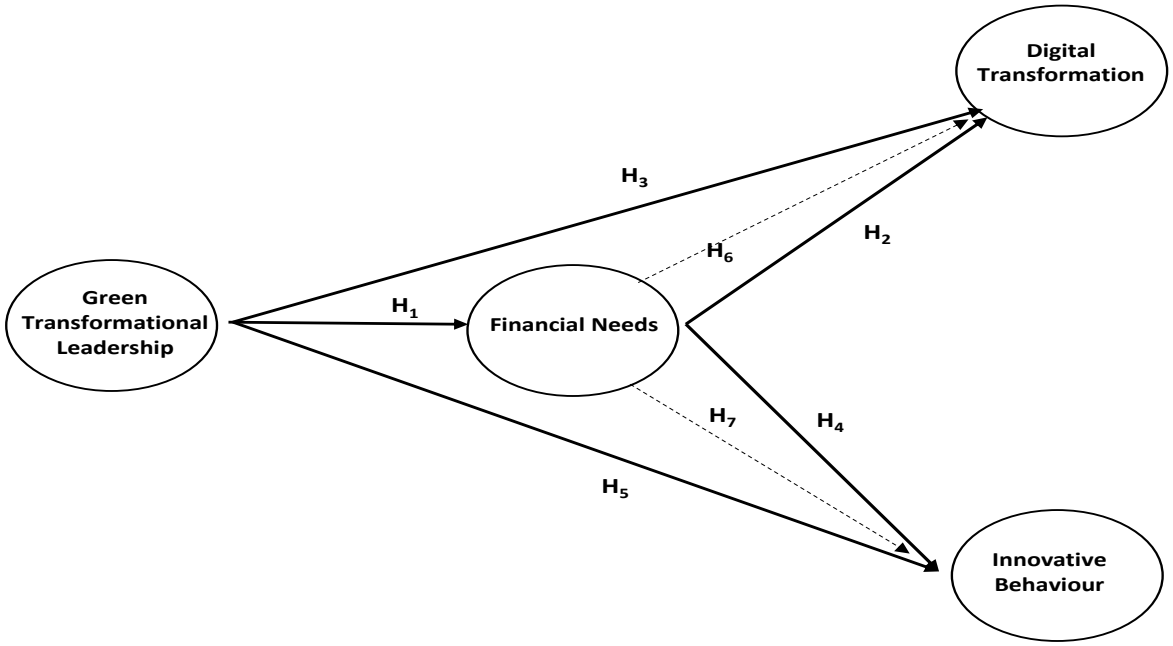
Mediating Role of FNs

Focusing on the relationships between these concepts, it is observed that leaders' environmentally sensitive visions enhance employees' participation in eco-friendly and innovative thinking processes, thereby paving the way for green innovation (Waqas et al., 2025). Similarly, a leader's inspirational and value-driven approaches at the team level positively influence team creativity and innovative initiatives (Li et al., 2024). In terms of DT, this leadership style facilitates the appropriation of digital technologies in organizations and reduces employees' resistance to digital applications. Furthermore, various studies have established that DT is directly linked to knowledge sharing among employees and green innovation capacity (Oktaysoy et al., 2025). However, the effective functioning of this triadic relationship hinges on meeting employees' FNs as a fundamental prerequisite. In the absence of financial security, employees become reluctant to engage in innovative activities, the adaptation process to digital applications weakens, and leaders' directives fail to resonate adequately. In this regard, a study by Kiymaza and Öztürkkal (2019) suggests that low levels of financial satisfaction among employees lead to reduced IBs and diminished organizational commitment. Additionally, uncertainties regarding job security arising from DT can exacerbate employees' financial stress, potentially exerting negative effects on innovation (Senadjki et al., 2023). Based on this relational pattern, the research hypotheses were developed and are presented below:

H6: FNs mediate the effect of GTL on DT.
H7: FNs mediate the effect of GTL on IB.

Conceptually, GTL fosters employees' IBs, which in turn support the DT process; however, the success of this process is largely shaped by the extent to which employees' FNs are adequately met. Therefore, these four concepts should be addressed as an integrated whole that supports and contributes to sustainable organizational success. The model that emerged as a result of forming the hypotheses is presented in Figure 1.

Figure 1
Research Model



Method

This study aims to investigate the mediating role of FNs in the impact of GTL on DT and IB, as well as to determine the relationships between these concepts. To ensure the study's compliance with scientific and ethical standards, approval was attained from the Giresun University Social Sciences Ethics Committee on May 9, 2025, under decision number 05-169. Designed according to a quantitative research framework, this study employed statistical analysis methods to elucidate the effect and mediation relationships among the examined concepts. The study population consists of employees working in small and medium-sized enterprises (SMEs) located in Giresun and Kars. The sample size was calculated using the formula developed by Cochran (1977) and specified below. In the formula, n represents the population size, p represents the percentage of occurrence of a condition or situation, e represents the margin of error, and z represents the confidence level. Based on an estimated population of approximately 80,000 individuals, it was calculated that a minimum sample size of 382 participants was required to attain a 95% confidence interval (Cochran, 1977).

$$\mathbf{n_0} = \frac{\mathbf{z^2 pq}}{\mathbf{e^2}} \quad (1)$$

Data were collected online using questionnaire forms that contained scales related to the concepts under investigation. The questionnaires were structured on a 5-point Likert-type scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The GTL scale utilized in the study was proposed by Chen and Chang (2013) and translated into Turkish by Kerse et al. (2021). This unidimensional scale consists of six items. Chen and Chang (2013) demonstrated high scale reliability (Cronbach's Alpha: .90). The DT scale was proposed by Yao et al. (2023) and translated from English to Turkish and back to English by the authors. This unidimensional scale comprises four items. Yao et al. (2023) reported high scale reliability (Cronbach's Alpha: .92). The IB scale used in the study was developed by Çalışkan et al. (2019). This scale includes six items and is unidimensional. Çalışkan et al. (2019) indicated high scale reliability (Cronbach's Alpha: .93). The final scale used in the study is the FNs scale, developed by Kaygin et al. (2023). This scale consists of four items and is unidimensional. Kaygin et al. (2023) reported moderate scale reliability (Cronbach's Alpha: .71).

The data for this study were collected using face-to-face surveys, which included scales related to the concepts under investigation, using a convenience sampling technique. Convenience sampling is a technique where the researcher finds respondents and collects data without any specific order or system, depending on the nature of the study. In short, the researcher conducts the study by distributing forms to individuals who meet the specified criteria in various locations, including on the street, in public buildings, facilities, or other designated areas. The study was conducted in SMEs located in organized industrial zones, where the owner or human resources manager had previously indicated their willingness to participate in the research. Forms were distributed to 27 SMEs in Giresun and 8 SMEs in Kars, and their completion was ensured through daily checks during the study period. Between May 10, 2025, and May 18, 2025, a total of 442 individuals participated in the study. Data collection was concluded at this point, as the required sample size was achieved. Upon review, 16 survey forms were identified as having been completed haphazardly and were excluded from the analysis. The remaining 426 forms were used for the data analysis phase. The data obtained from the forms were analyzed using structural equation modeling (SEM) with the Smart PLS (4.1.1) program. SEM is a statistical model that combines the principles of factor analysis and path analysis to measure the assumed relationships between latent structures and observed indicators.

Results

The study was conducted with 426 employees from SMEs, whose detailed socio-demographic information is shown below. The majority of participants were male (77.70%), a finding consistent with the higher male employment rates observed across Türkiye. The proportion of married participants (71.30%) exceeded that of single participants. The majority of participants held a bachelor's degree (66.90%) and had less than 16 years of professional experience (67.40%). Additionally, most participants (70.10%) reported earning less than 60,001 Turkish Lira. Details of demographic information are illustrated in Table 1.

Table 1

Demographic Information

Demographics	Variables	n	%
Gender	Female	95	22.30
	Male	331	77.70
Marital Status	Married	281	71.30
	Single	145	28.70
Age	18-30 y/o	74	17.40
	31-40 y/o	193	45.30
	41-50 y/o	131	30.80
	51 y/o and older	28	6.50
Education Level	High School	29	6.80
	Associate Degree	64	15.00
	Undergraduate Degree	285	66.90
	Graduate Degree	48	11.30
Experience	5 years and less	54	12.70
	6-10 years	126	29.60
	11-15 years	107	25.10
	16-20 years	87	20.40
	21 years and more	52	12.20
Income	40.000-50.000 TL	182	42.70
	50.001-60.000 TL	117	27.40
	60.001-70.000 TL	85	20.00
	70.001-80.000 TL	28	6.60
	80.001 TL and higher	14	3.30

Based on the data collected from 426 participants, the scale's validity was determined using Smart-PLS version 4.1.1, with the acceptable values presented below. The factor loadings of the scale items exceeded the threshold value (.50). Internal consistency analyses were conducted to assess the consistency of the indicators underlying the research model. The Cronbach's Alpha coefficient and Composite Reliability (CR) coefficient are key reliability indicators. Cronbach's Alpha, CR, and rho_A coefficients exceeding .70, as per the literature, indicate validity and reliability. Additionally, for validity and reliability, the Average Variance Extracted (AVE) value must be greater than .50 (Hair et al., 2017). The validity and reliability values in Table 2 exceed the threshold for all constructs.

To determine common method bias among the scale items, the Variance Inflation Factor (VIF) value was utilized. Since the VIF values in Table 2 are lower than 10, there is no common method bias (Uygungil-Erdogan et al., 2025).

Table 2

Factor Load Values, Validity and Reliability

Items	Factor Loading	Mean	Standard Deviation	Kurtosis	Skewness	VIF
Green Transformational Leadership Scale						
Cronbach's Alpha= 0.86, rho_A=0.87, CR=0.90, AVE=0.60						
GTL1	0.65	2.87	1.19	-0.30	0.31	1.42
GTL2	0.82	3.18	1.15	-0.48	0.31	2.13
GTL3	0.67	3.99	1.14	-1.10	-0.47	1.49
GTL4	0.81	2.87	1.26	-0.56	0.29	1.99
GTL5	0.81	3.44	1.16	-0.81	0.12	2.12
GTL6	0.81	3.22	1.24	-0.80	0.18	2.01
Financial Needs Scale						
Cronbach's Alpha= 0.78, rho_A=0.79, CR=0.86, AVE=0.60						
FN1	0.88	3.42	1.08	-0.62	0.30	3.22
FN2	0.88	3.43	1.08	-0.53	0.24	3.33
FN3	0.89	3.24	1.16	-0.51	0.22	3.80
FN4	0.89	3.32	1.18	-0.71	0.16	3.73

Digital Transformation Scale						
Cronbach's Alpha= 0.81, rho_A=0.82, CR=0.87, AVE=0.63						
DT1	0.82	3.29	1.16	-0.53	0.17	1.92
DT2	0.86	3.16	1.18	-0.60	0.31	2.31
DT3	0.92	3.26	1.23	-0.77	0.11	3.85
DT4	0.91	3.29	1.18	-0.69	0.18	3.53
Innovative Behaviour Scale						
Cronbach's Alpha= 0.83, rho_A=0.83, CR=0.89, AVE=0.66						
IB1	0.81	3.35	1.17	-0.75	0.16	2.64
IB2	0.83	3.48	1.14	-0.81	0.14	2.72
IB3	0.84	3.23	1.15	-0.50	0.25	2.50
IB4	0.89	3.19	1.15	-0.41	0.25	3.32
IB5	0.85	3.29	1.15	-0.52	0.18	2.74
IB6	0.85	3.11	1.18	-0.45	0.24	2.77

Note. CR= Composite Reliability, AVE= Average Variance Extracted

Discriminant validity, another critical criterion for the scales, assesses the degree to which latent variables are distinguished. A review of the literature indicates that the criteria developed by Fornell and Larcker (1981) and Henseler et al. (2015) are the most commonly employed methods for assessing discriminant validity.

Table 3

Discriminant Validity

Fornell-Larcker Criterion and HTMT				
	1	2	3	4
Digital Transformation	.88	.66*	.82*	.88*
Financial Needs	.59	.89	.50*	.64*
Green Transformational Leadership	.72	.44	.77	.73*
Innovative Behaviour	.80	.58	.65	.84

Note. *indicate HTMT values.

Regarding the Fornell-Larcker Criterion, the coefficients at the intersection of variables represent the square root of the AVE coefficients for the respective variables. This method determines whether significant overlap exists among the variables (Hair et al., 2017). The HTMT criterion is calculated by determining the geometric mean of the average correlations between research constructs relative to the average correlations within the constructs' items. According to the HTMT criterion, the obtained values must be lower than 0.90 (Henseler et al., 2015). As presented in Table 3, the HTMT ratios are lower than .90, and the Fornell-Larcker Criterion values meet the desired thresholds, confirming discriminant validity. Consequently, all variables meeting the required thresholds indicate that each scale construct is distinct and differentiated from the others.

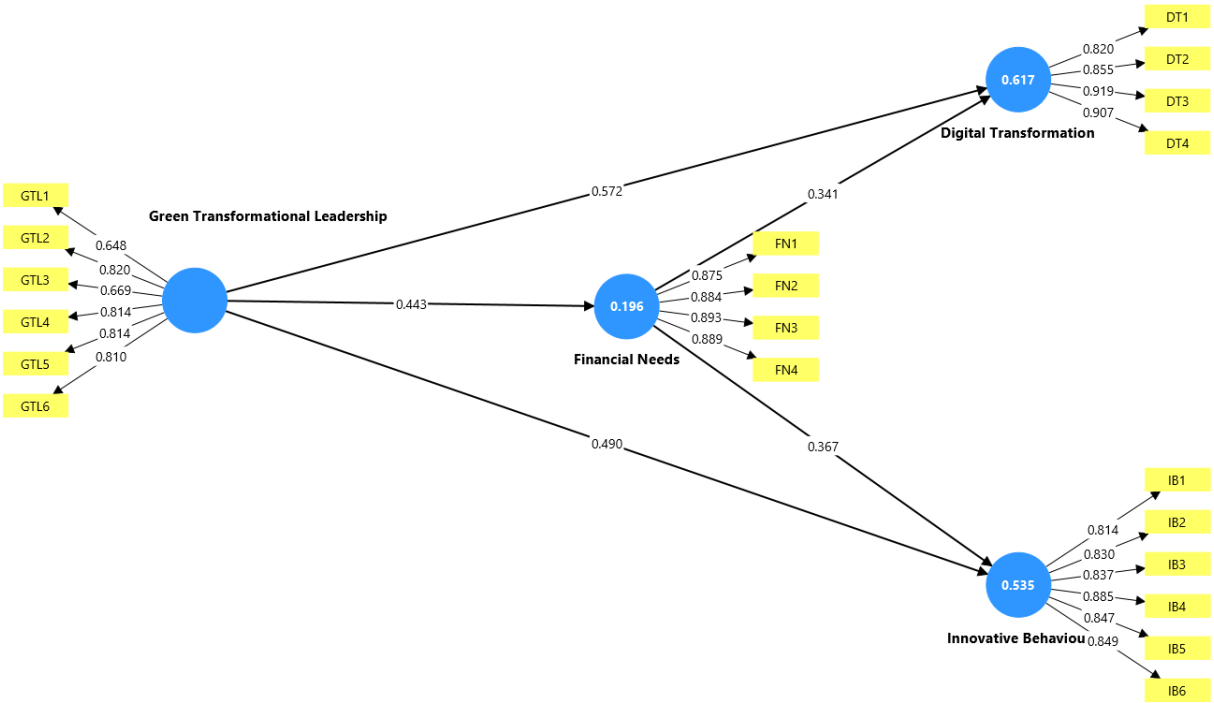
The scales in the model were found to meet the necessary threshold requirements prior to the SEM, which was initiated. The "Bootstrapping" calculation method was employed in the evaluation of the SEM. The Bootstrapping method, developed by Efron (1979), for conducting mediation tests, was implemented in the Smart-PLS program with a resampling size of 5.000. This method facilitates the accurate estimation of confidence intervals and standard errors for path coefficients (Uygungil-Erdogan et al., 2025). To assess whether the path coefficients are statistically significant, beta, p, and t values were examined (Hair et al., 2017). The SEM results are presented below in Table 4.

Table 4
Hypothesis Test Result

Path	ß	*SD*	*t*	*p*	Hypothesis	f2-VAF
GTL -> FNs	.44	.04	1.93	.000	H1 Accept	.24
FNs -> DT	.34	.04	8.76	.000	H2 Accept	.24
GTL-> DT	.57	.04	16.43	.000	H3 Accept	.69
FNs -> IB	.37	.04	8.72	.000	H4 Accept	.23
GTL-> IB	.49	.04	12.12	.000	H5 Accept	.42
GTL-> FNs -> DT	.15	.02	6.60	.000	H6 Accept Partial	VAF:.21
GTL-> FNs -> IB	.16	.03	6.58	.000	H7 Accept Partial	VAF:.25

It has been accepted in seven different hypotheses. Partial mediation has been determined in hypotheses H_6 and H_7 according to the VAF value. The VAF value between 20% and 80% indicates partial mediation. The f^2 value serves as a standardized average effect measure for participants across all levels of the independent variable (Chen & Chen, 2010). An f^2 value of 0.02 or greater indicates a low level, 0.15 or greater indicates a medium level, and 0.35 or greater indicates a high level of relationship (Hair et al., 2017). A medium-level relationship was observed between GTL and FNs (.24), between employees' FNs and DT (.24), and between FNs and IB (.23). A high-level relationship was found between GTL and DT (.69) and between GTL and IB (.42). The visualized results of the SEM are presented in Figure 2.

Figure 2
Model Test Result



The goodness-of-fit values for the model used in the study are presented in Table 5. Within the scope of the literature, considering the sample size and number of items, the Standardized Root Mean Square Residual (SRMR) value should be lower than .08, and the Normed Fit Index

(NFI) value should exceed .80 (Hair et al., 2017). The goodness-of-fit values of the model, as shown in Table 5, meet the desired thresholds.

Table 5
Model Goodness of Fit Values

	Saturated Model	Estimated Model
SRMR	.04	.07
d_ULS	.50	1.20
d_G	.33	.41
Chi-Square	844.04	965.39
NFI	.87	.85

Discussion

This study aims to examine the mediating role of FNs in the impact of GTL on IB and DT through a survey conducted with 426 employees from SMEs in Giresun and Kars. The data collected were analyzed using SEM with the Smart-PLS software, and the findings are expected to make significant contributions to the relevant literature.

The first hypothesis focused on the relationship between GTL and FNs. A literature review revealed no prior studies explicitly explaining how GTL shapes FNs, making this study a key motivator in addressing this gap. The data analysis confirmed that GTL has a significant and positive effect on FNs (ß = .44; $p < .01$). This finding indicates that the environmentally sensitive approach of GTL extends beyond environmental strategies, also fostering employees' economic well-being. In other words, GTL leaders create a more holistic organizational climate by valuing employees' economic security alongside their environmental motivations. Fernandes and Machado (2021) suggested that GTL practices enhanced employees' psychological well-being and organizational commitment. Similarly, Loscalzo et al. (2023) argued that in organizational environments with reduced financial concerns, employees experienced lower stress levels and increased productivity and commitment. Thus, GTL's sensitivity to employees' personal expectations, including FNs, can be considered a strategic factor in enhancing organizational efficiency and sustainable success. Based on this, within the framework of GTL's RBV Theory, it is seen that employees are regarded as the organization's indispensable and most valuable resource, increasing the organization's performance and providing a competitive advantage. The study has demonstrated that the success achieved within the organization is reflected in the financial support provided to employees.

The findings related to the second hypothesis demonstrate that employees' FNs have a positive and significant impact on DT (ß = .34; $p < .01$). This result highlights that successful DT requires more than technological infrastructure and strategic vision; ensuring employees' basic economic security directly influences their contributions to transformation processes. The necessity of meeting basic needs for employees to effectively participate in DT is supported by various theoretical frameworks and empirical studies. Based on Maslow's hierarchy of needs, individuals can focus on higher-level needs (e.g., innovation, technological adaptation, strategic thinking) only after their security and basic living needs are met. In this context, financial security serves as a psychological prerequisite for employees' voluntary engagement in DT initiatives. This finding aligns with prior studies in the literature. For example, Senadjki et al. (2023) emphasize that uncertainty and job security concerns are prevalent among employees

during DT, and ensuring economic stability and providing financial support enhance success in these processes. Similarly, Alshammari (2023), in a study on the organizational impacts of digitalization, underscored that employee satisfaction and economic security were key determinants of digital adaptation. The result from H_2 indicates that DT requires investments not only at the organizational level but also at the individual level. With TLT, the leader works individually with employees and makes them part of the DT. The study has demonstrated that the leader's role model is a crucial variable in making employees feel valued and resolving their financial concerns. For example, employees' financial capacity plays a significant role in aspects of digitalization such as remote working infrastructure, personal digital skill development, and technology-based learning processes. Thus, the impact of FNs on DT encompasses not only participation motivation but also digital skill development and willingness to engage in learning processes.

The third hypothesis established that GTL has a positive and significant impact on DT (ß = .57; $p < .01$). This finding demonstrates that leaders operating with an environmental sensitivity and sustainability perspective can more effectively guide employees through digitalization processes, making these processes more successful. GTL integrates the principles of classical transformational leadership with environmental values, encompassing not only performance enhancement but also social responsibility (Ayandibu, 2019). The multidimensional nature of GTL makes it a strategic leadership style for complex and comprehensive change processes, such as DT, which involves not only technological investments but also social components, including organizational culture, human capital, and leadership approaches (Kraus et al., 2022). This finding supports the "green digital leadership" model proposed by Alabdali et al. (2024), which suggests that digitally oriented leadership combined with an eco-friendly vision enhances employees' motivation and technological adaptation capabilities during digitalization processes. Thus, the result from H_3 confirms that GTL is not only a supportive but also an enabling leadership style in DT processes. GTL combines environmental awareness with a digital vision, helping organizations achieve not only "green" but also "smart" transformation goals. In this way, GTL once again confirms that digitalization is a process based on strategic leadership rather than technical expertise, as demonstrated by TLT. TLT contributes to this conclusion by supporting a future-oriented transformation.

The fourth hypothesis confirmed a significant impact of FNs on IB (ß = .37; $p < .01$). This finding indicates that financial security is not merely an economic factor but also a fundamental psychosocial determinant shaping employees' creativity, innovation, and entrepreneurial capacities. When employees' basic economic needs are met, they are more inclined to participate in higher-level thinking, generate creative solutions, and exhibit risk-taking behaviors. Since IB involves a multistage process, including idea generation, advocacy, and implementation, employees must be emotionally and mentally prepared for this process (De Jong & Den Hartog, 2010). Papachristopoulos and Arvanitis (2024) emphasized that employees' psychological motivation and inner comfort assumed a significant role in IB, with this motivation being directly influenced by economic security. This finding is largely consistent with Maslow's hierarchy of needs in the literature. Xiao and Anderson (1997) argued that meeting employees' FNs enhanced self-efficacy and psychological control, creating a foundation for creativity and IBs. Similarly, Kiymaza and Öztürkkal (2019) demonstrated that

employees' financial well-being increased individual productivity and fostered more active participation in idea generation and implementation processes.

The study's findings indicate that GTL has a significant and positive effect on employees' IB (ß = .49; $p < .01$). This result suggests that leadership styles sensitive to environmental values contribute positively not only to sustainability goals but also to employees' innovative potential. The effect of GTL on IB can be explained within the framework of TLT (Bass, 1985), which posits that inspirational motivation and intellectual stimulation play critical roles in encouraging employees to develop boundary-pushing, unconventional ideas. GTL integrates these characteristics with environmental goals, simultaneously supporting individual development and organizational innovation. The environmental sustainability perspective of GTL makes organizational goals more meaningful to employees, allowing them to connect their contributions to a broader purpose. This sense of meaning, referred to as "job meaningfulness" in the literature, is a key factor directly influencing IB (Oberer & Erkollar, 2018). The finding related to this hypothesis aligns directly with Waqas et al. (2025), which indicates that GTL enhances employees' green innovation tendencies, making them more open to both environmental and technological innovations. Similarly, Li et al. (2024) demonstrated that GTL fostered team creativity and innovative initiatives. Additionally, Tongsoongnern and Lee (2023) suggested that GTL enhanced employees' green self-efficacy, making them more inclined toward environmental and innovative actions. This situation creates an organizational atmosphere in which employees, working under the RBV theory, strengthen their self-confidence and do not shy away from taking risks; on the contrary, they become more courageous in generating new ideas, paving the way for strategic superiority for organizations (Öğretmenoğlu et al., 2021).

Analyses related to the sixth hypothesis confirmed that FNs assume a partial mediating role in the effect of GTL on DT (ß = .15; $p < .01$; VAF = 21%). This finding indicates that employees' participation in DT processes is determined not only by leadership style but also by their financial security perceptions. The VAF value exceeding 20% demonstrates that FNs partially explain the effect on DT. This suggests that employee well-being acts as an "enabler" in strengthening the relationship between leadership intervention and DT outcomes. Partial mediation indicates that GTL's effect on DT occurs directly, but this effect is significantly enhanced through FNs. While GTL has the capacity to guide employees toward environmental responsibility and digital vision, the effectiveness of this guidance increases with the extent to which employees' basic economic needs are met. The RBV provides a significant theoretical framework for understanding this relationship. According to the RBV, digital technologies are strategic resources, but their effective utilization depends on the organization's human capital and leadership quality (Barney, 2001). However, human capital gains meaning not only through technical skills but also through employees' organizational commitment and psychological engagement in the process. Financial security directly influences employees' capacity to adopt and utilize this strategic resource. Thus, this finding suggests that in complex and costly transformation processes, such as DT, the impact of leadership may remain limited unless supported by financial well-being. While GTL is a powerful transformation tool on its own, addressing employees' FNs is a critical mediating variable for sustaining this effect.

The findings related to the seventh hypothesis indicate that FNs assume a partial mediating role in the impact of GTL on IB (ß = .16; $p < .01$; VAF = 25%). The VAF value exceeding 20%

demonstrates that FNs partially explain this effect and play a non-negligible role. This result suggests that GTL directly fosters employees' IB, but this effect is significantly shaped by the extent to which employees' FNs are met. The partial mediation of FNs indicates that leadership's impact becomes stronger when reinforced by psychological and economic needs. Employees are more inclined to take creative risks, generate new ideas, and implement them when they feel financially secure, in addition to being guided by an inspiring and environmentally conscious leader. This finding aligns with the "financial needs model" developed by Xiao and Anderson (1997), which suggests that meeting basic FNs enhances psychological balance and self-efficacy, directly supporting creative thinking processes. Similarly, Kiymaza and Öztürkkal (2019) indicated that financial well-being positively influenced IB, with economically secure employees exhibiting a greater tendency to generate innovations. Additionally, Peng et al. (2023) demonstrated that perceived organizational support influenced IB, with financial security reinforcing this perception. In cases where FNs are unmet, employees tend to avoid risks in uncertain environments, opting for conservatism over sharing innovative ideas. The support for H_7 confirms that IB is shaped not only by leadership-driven motivation but also by employees' economic well-being. Organizations must view employee well-being not merely as a "fringe benefit" but as a strategic success factor in their innovation strategies. While GTL provides a supportive leadership model for this strategy, addressing FNs enables this model to function effectively in practice.

Conclusion

The study's findings suggest that within a human-centered organizational structure, employees and leaders working collaboratively can contribute to addressing environmental issues. In developing countries like Türkiye, FNs are a priority, yet employees are aware of environmental issues and inclined to support efforts to address them. However, FNs can act as a significant facilitator or barrier to organizational needs. Therefore, this aspect should be strategically considered in organizational policy-making processes.

The study's limitation lies in its cross-sectional design, conducted solely with SMEs in a limited geographical area in Turkey. Addressing these limitations is considered important for generalizing the results. Based on the study's findings, several suggestions can be made for future research. First, examining variables such as the use of artificial intelligence for addressing environmental issues, the impact of grants on organizations, employees' citizenship behavior, and organizational culture could be beneficial. Additionally, further exploration of FNs as a guiding factor for employees within organizations is recommended.

Declarations

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No potential conflict of interest was reported by the authors.

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To ensure the study's compliance with scientific and ethical standards, approval was attained from the Giresun University Social Sciences Ethics Committee on May 9, 2025, under decision number 05-169.

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