DOI: 10.52131/pjhss.2025.v13i2.2884

Pakistan Journal of Humanities and Social Sciences

Volume 13, Number 02, 2025, Pages 479-495
Journal Homepage:
https://journals.internationalrasd.org/index.php/pjhss

Fostering Innovative Work Behavior in New Product Development Projects: A Theoretical Review

Khawaja Zeeshan Waheed [1], Muhammad Ishfaq Khan[2]

[1] Management Sciences Department, Capital University of Science & Technology, Islamabad, Pakistan.
Email: saigol@ymail.com
[2] Management Sciences Department, Capital University of Science & Technology, Islamabad, Pakistan.
Email: ishfaq@cust.edu.pk

ARTICLE INFO

Article History:
Received: April 28, 2025
Revised: June 25, 2025
Accepted: June 26, 2025
Available Online: June 27, 2025

Keywords:
Innovative Work Behavior
New Product Development
Social Cognitive Theory
Self-Determination Theory
Transformational Leadership
Innovation Theory

Funding:
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

Innovative Work Behavior (IWB) is widely recognized as a driver of organizational competitiveness, particularly in New Product Development (NPD) projects where uncertainty and rapid change demand creativity and adaptability. Although a considerable amount of research has been done on IWB, most of the studies tend to focus on it by using only one theoretical perspective thus failing to establish a comprehensive picture of this multidimensional phenomenon. This paper provides a comprehensive review that synthesizes four influential perspectives, Social Cognitive Theory (SCT), Self-Determination Theory (SDT), the Theory of Innovation and Transformational Leadership Theory (TLT) into an integrative framework for explaining IWB in NPD contexts. The framework clarifies how self-efficacy and learning (SCT), motivational needs for autonomy, competence, and relatedness (SDT), organizational structures and entrepreneurial orientation (Innovation Theory), and transformational leadership practices (TLT) jointly shape employees' innovative contributions in NPD projects. By combining these perspectives, the review moves beyond fragmented accounts of IWB to highlight the dynamic interplay of individual, motivational, organizational, and leadership factors. This synthesis advances theoretical clarity while offering practical guidance for managers seeking to foster innovation and creativity. The paper concludes by stating future research directions, which implies empirically testable hypotheses, that test cross-level mechanisms and interaction. Holistically, the framework contributes to the literature and points out the theoretical and practical importance of the knowledge on IWB in the context of the NPD settings.

Corresponding Author's Email: saigol@ymail.com

1. Introduction

Contemporary corporate activities are marked by accelerating technological changes and fluid market conditions highlighting innovation as an essential tool for sustaining competitive advantage. In order to remain effective organizations must cultivate innovative work behavior (IWB) within their workforce to remain agile and compete (Braun & Follert, 2024). The concept of IWB was developed and endorsed as one of processes that are directly related with the organizational agility and performance (Ma, Sun, & Yin, 2024). Li, Makhdoom and Asim (2020) and Wang, Chen and Li (2021) demonstrated in their empirical studies that by fostering IWB in workplace the organizations enhanced their innovation capacities, increased employee engagement, creativity and job satisfaction, leading to the overall success of the projects. Thus, an in depth investigation of the mechanisms and processes responsible for fostering IWB requires examination on a broad spectrum and through different theoretical lenses responsible in developing this multi-dimensional behavior. Innovation can take place in the form of incremental changes to radical disruptions, yet both forms require specific strategic and psychological actions. In line with this suggestion, the transformational leadership theory plays a crucial role in fostering

IWB. It inspires the employees to go beyond what mainstream thinking can achieve and also harness their creative potential (Khan, Ahmed, & Khan, 2021; Kim & Yoon, 2025). Transformational leaders foster psychological safety and allow the staff to express ideas without fear, thus establishing a climate that fosters IWB. These results are also in agreement with the Social Cognitive Theory (SCT), which postulates that individual behavior is formed with cognitive and environmental influences (Xu & Suntrayuth, 2022).

Also, it is worth mentioning that the team dynamics of IWB and that different cooperative spaces are more effective in the context of innovation. Such effect is positive relation between cognitive diversity in teams and openness to experience in team members. This is mediated by intra team knowledge sharing which allows transforming diversity to innovative solutions (Cui, Wang, & Zhang, 2023; Xia et al., 2021). Companies with collaborative culture and knowledge-sharing are accumulating quantifiable benefits in creativity and innovation pathways (Arshad, Hassan, & Azam, 2024; Li & Ye, 2021). The combination of these approaches to the theory can help to achieve a powerful ground to learn about IWB. Like, SDT emphasizes the motivational value of intrinsic elements, TLT focuses on the impact of supportive leadership on developing an innovative climate and finally, SCT emphasizes the mutual influence of individual cognition and environmental stimuli (Javed et al., 2021). Empirical reports also suggest that when inclusive and entrepreneurial leadership practices are practiced, creative self-efficacy is increased enhancing IWB (Xu & Suntrayuth, 2022). Hamid (2022) suggests that High-Performance Work Systems (HPWS), constitute an effective framework for enhancing employee innovation by combining autonomy, capability, and knowledge-sharing incentives (Arshad, Hassan, & Azam, 2024). Likewise, psychological safety has been established as a mediator between an innovative organizational climate and IWB, specially, when employees perceive the latitude to take calculated risks, they become prone to show more innovative behavior. Notwithstanding the breadth of available frameworks, extant empirical evidence underscores the need for organizations to adopt nuanced approaches to IWB, particularly in balancing leadership, cultural and individual determinants in the domain of NPD. Thus, it is recommended that future studies aim to optimize these models by approaching them in terms of remote employment and digitalization, thus guaranteeing the suitability of these models in the changing workforce scenario (Schrijvers, Bosma, & Stam, 2024). It is therefore recommended that organizations may be encouraged to scrutinize their innovative competencies at all times and embark on strategies that enhance a culture of IWB in efforts to maintain competitive edge in the face of market volatility in the global market (Agazu & Kero, 2024).

2. Literature Review

2.1. Innovation

Nguyen, Ho and Ngo (2024) defines innovation as the conception, adoption or implementation of products, services or processes that confer substantive market standing and elevated customer satisfaction. It is assumed that the innovation has its most suitable application in a new product development scenario where the relationship with performance indicators and competitive advantage is direct (Chirumalla, 2021). Companies with a strong innovation ability are usually more likely and responsive to changing customer demands and the transformations of the market environment. These organizations use market orientation insights to incorporate creativity and efficiency into their innovation processes (Laksana, Apriliado, & Kusmantini, 2022). Also, organizational growth cannot materialize without innovation, as it does not only meet the current consumer needs but also pre-empts the future demand, thus helping to create sustainable business models (Braslina et al., 2022; Jusufi, 2023). Innovation oriented strategies lead to better marketing performance and financial results, thus demonstrating the economic importance of innovation to maintain a competitive advantage in a market that has become more and more saturated (Loucanova, Olsiakova, & Palus, 2022; Šlogar, Morić Milovanović, & Hrvatin, 2023). Companies capable of implementing systematic approaches to entrench innovation as part of the operational outlook are in a position to capitalize on opportunities that emerge and deal with market uncertainties (Liu, 2023; Sun et al., 2025). The broad knowledge and methodological application of innovation in product development strategies is not only beneficial but also essential to the success of organizations in the long term.

Commonly "innovation," is a term that is used when emphasizing a layered phenomenon that encompasses the creation, adoption, or implementation of something new (or, at least, substantially improved) across the four domains of technology, organization, market, and

society. The term may be a concept, process, product and service. Technology-oriented innovation generally involves designing, improving, or rolling out fresh systems, tools, or methods, whereas organization-oriented innovation often entails modifying management styles or revisiting business models. Social innovation targets social challenges through creative problem-solving techniques (Ismail & Mohamed, 2022; Zhou et al., 2023). From a macro perspective, the discourse is largely framed by two broad categories, incremental and radical innovation. Incremental innovation denotes steady, incremental upgrades to existing products, processes or services that improve efficiency or functionality without overhauling the core design. Darmawan, Prayekti and Kusuma (2024) highlights that radical innovation, by contrast signals game changing shifts that reshape markets or industries and can give rise to brand-new paradigms (Liao, Zhou, & Yin, 2022). Scholars emphasize that organizations that actively pursue innovation strengthen competitiveness, adaptability and growth within today's fast-moving business environment. Empirical studies demonstrate that firms that cultivate innovation are quicker to respond to shifting consumer tastes and technological disruptions, thereby securing and maintaining strategic advantage (Özdaşli, Ceyhan, & Yildirim, 2023; Shafiq & Zafar, 2023). Alshahrani (2024) believes that intrinsically, the impetus for innovation within any organization is rarely exclusively top-down. Rather, it is mostly triggered by the ingenuity of teams and individuals. Innovative work behaviors (IWBs) are the deliberate steps that employees take to generate, promote and implement new ideas constituting the foundations of organizational innovation. These behaviors are necessary since they translate the ideas of creativity to practical outcomes or whether the outcome is a new product, an improved process, or a new service (Bauwens, Audenaert, & Decramer, 2024).

2.2. Innovative Behavior

Mahmood et al. (2025) supports that creativity and initiative by the employees as exhibited through innovative behavior take a central stage in new product development. Empirical findings confirm that transformational leadership, organizational environment, and knowledge-sharing practices constitute the main determinants of this behavior and, consequently, exert a decisive influence on NPD outcomes (Cheng, Jie, & Dou, 2025). Specifically, effective leadership cultivates an environment conducive to innovation by motivating employees and strengthening psychological safety, thereby facilitating innovative actions (K. Li et al., 2024; Wang et al., 2025; Wang et al., 2024). Also, the knowledge sharing encourages intellectual capital of the organization which enables employees to bring innovative ideas and practices (Le, 2024; Sơn, 2023). Mahmood et al. (2025) also shows in his studies that the innovative behavior of the employees is the foundation of organizational agility and responsiveness to facilitate sustainable product innovation in competitive markets. In line with this, the incorporation of effective leadership, knowledge sharing and a favorable organizational environment fosters innovative behaviors that significantly increase chances of success in the development of new products (Ragmoun, 2024; Ragmoun & Alfalih, 2024).

Research indicates that innovative behavior has three principal underlying attributes which include creativeness, risk-taking and proactivity. Firstly, the creativity lies in the capacity to imagine some new solutions or a new way of thinking about a problem (Quang, Ngoc, & Huyen, 2022; Toscano et al., 2023). Companies that are found to encourage new thinking do not simply discuss it they create Innovative behaviors and this suggests that firms must create Innovative environment (Jun & Lee, 2023; Salsabila & Mansyur, 2024). Second, a tendency to take risk is a key element, since it is bound to be probing the limits without always paying attention to the conventional rules and leaving the comfort zone to know the unknown (Dayanti & Yulianti, 2023). Innovative ideas begin with a desire to go beyond the ordinary and demands risk taking. The companies which support risk taking become more visible and more capable of competing. The last of the three terms that complete the triad is proactivity, as it explains how individuals identify opportunities and get in earlier than required (Ebrahim, Ismail, & Kassim, 2023). This readiness feeds innovation by keeping a consistent stream of ideas and initiatives that mesh with the organization's goals. Together, creativity, risk-taking, and proactivity form the backbone of innovative work behavior, proving it's a specific, workplace-centered construct rather than just a catch-all notion(Mohammad, 2015; Mohammad & Ahmed, 2017).

2.3. Innovative Work Behavior (IWB)

Innovative work behavior (IWB) refers to the deliberate, purposeful creation, introduction, and application of new ideas within a role, team or organization with the aim of boosting performance (Janssen, 2000). This construct captures employees' efforts to drive organizational

innovation through original practical solutions (Farrukh et al., 2023). IWB can be viewed as a multidimensional concept that consists of three dimensions, namely, idea generation, idea promotion and idea implementation. Idea Generation means thinking up of new ideas or solutions at a particular time that would solve problems in the workplace. This opening phase is critical because it sets up the groundwork for future innovation through creative thinking and problem-solving techniques (Abdrabou & El-said Ghonem, 2023; Anwer & Hyder, 2024). Idea Promotion follows, focusing on championing these ideas to colleagues, supervisors, or external stakeholders in order to secure backing and emphasize the collaborative aspect of innovation. Lastly, Idea Implementation is all about making the idea a reality that can be in the form of a simplified process, a new product or a better service. This step is crucial in the implementation of creative projects and achievement of the worth of new projects (Sari & Wahyuni, 2023). Thus, IWB is one of the most significant processes that drive organizational development specially in new product development projects. A multi-level conceptual model of innovation, innovative behavior and innovative work behavior is shown in figure 1 below.

Figure 1: Conceptual Model of Innovation – Innovative Behavior - IWB

Source: Authors Own Conceptualization (2025)

2.4. Factors Fostering Innovative Work Behavior

Fostering innovative work behavior is a multi-domain operation involving individual, organizational, and environmental factors.

Individual Factors Individual attributes have a major influence on how employees develop IWB. Creative problem solving and divergent thinking abilities let people generate fresh ideas (Arifin, Salleh, & Saleem, 2024; Nguyen, Ho, & Ngo, 2024), whereas intrinsic motivation is the drive to do things because of which employee feel satisfied and keeps them persistence and involved, thus supporting innovation (Anwer & Hyder, 2024). The belief that you can be successful in the innovative activities is the employee's creative self-efficacy that will lead employees to take risks and experiment (Marić, Aleksić, & Knežević, 2022; Siddiqui et al., 2024). People who believe they can do it, are better placed to initiate and sustain IWB since they anticipate to overcome obstacles.

Organizational Factors Transformational leadership offers encouragement and vision, encourages creativity and pushes people toward innovative projects (Ahmed et al., 2024; Sun et al., 2025). Psychological safety culture allows workers to be risk-takers because they are not afraid of being perceived negatively (Nuryanto, Basrowi, & Quraysin, 2024; Xu & Suntrayuth, 2022). Leadership plays an important role in guiding towards innovation success. Moreover, resource availability include time, money and technology also play a huge role in turning ideas into actionable results, that ultimately leads to success (Yang, Shafiq, Nazir, & Gillani, 2024; Yang, Shafiq, Sharif, et al., 2024). Companies Who are focused on emphasizing on these elements create an organizational setting that fosters IWBs leading to overall success (Ali Abd Elhamed & M .Badran, 2024; Liu, 2023).

Environmental Factors External market forces also influence IWB, but changes in technology have an impact on it, too. The market dictates competitive pressures on both companies and personnel to stay abreast with the current tools and technologies to provide new

avenues to solving problems in an innovative way. These external forces drive individuals to treat challenges dynamically and aim at more creative behavior at work (Pradana et al., 2022; Sueb, Mukhlis, & Murwani, 2024). Combining these aspects, organizations can create a highly successful ecosystem which would foster IWB and drive innovation, that will prepare organizations to survive in ever increasingly competitive markets.

3. Theoretical Frameworks for Understanding IWB

The scope of this paper is based on four extensively used theories in the studies conducted on IWB that offers best insights into fostering of IWB of employees: Social Cognitive Theory (SCT), Theory of Innovation, Self Determination Theory (SDT) and Transformational Leadership Theory. Each theory is examined in terms of its core principles, relevance to IWB and practical implications for fostering innovative behaviors in the workplace.

3.1. Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT) formulated by Albert Bandura Bandura (1997) centers on the reciprocal interaction among personal, behavioral and environmental dimensions of learning. The most important elements in SCT are self-efficacy and observational learning that have a central place in motivation and patterned behavior (Chen, 2024; Sokman et al., 2022). The belief that one can achieve the set goals is called self-efficacy, this concept affects the effort and the goals selected significantly (Agustina & Zainuddin; C. Li et al., 2024). The other important process is observational learning in which people learn skills or behavior by watching other people (de la Fuente, Kauffman, & Boruchovitch, 2023).

Firstly, the employees with strong self-efficacy are involved in the creative work such as design and testing of new ideas. The studies show that a high degree of self-efficacy enables the individuals to come back after the failures and restart when individuals are faced with uncertainties which is imperative to IWB (Malik et al., 2025). The information also indicates that self-efficacy has a purpose in proactivity in a team (Laily et al., 2023).

Secondly, through observational learning, people learn by watching those around them, especially innovative peers or leaders who succeed with new ideas. Watching others pitching an innovative idea at work can motivate other peers to try the same thing (Lisetyaningrum & Padmantyo, 2024). This learning by example speeds up the adoption of new skills and builds a culture that supports innovation.

Thirdly, SCT has focused on the potency of external environment. One cannot merely depend on personal traits only and the employees need to be provided with favorable working conditions as well. Resource availability, constructive feedback, and reward systems that celebrate risk-taking and experimentation all make innovation more likely (Wibowo, 2022). An organization with a culture of experimenting with something new, provides the employees with the liberation and motivation to explore new ideas.

With the help of these concepts of SCT, organizations have the chance to enhance IWB by building self-efficacy, showing role models and by constructing a climate that enables innovation. Through, training programs that enhance skills and confidence, can increase the beliefs among employees that they can be creative (Sangadji & Islami, 2024). By showing role models through mentoring or the identification of success stories in the company makes people realize how a creative action can be rewarded. These are the sources of inspiration to copy them (Lisetyaningrum & Padmantyo, 2024). Leaders create enabling climates backed by experiments, by offering honest feedback and rewarding innovation, while maintaining a safe space where employees feel free to think creatively (Kusumawijaya & Astuti, 2023). With these strategies, organizations can set up a loop of positive reinforcement for innovative behaviors, which in turn fuels innovation and performance across the business.

3.2. Theory of Innovation

Innovation theory, grounded in Joseph Schumpeter's concept of creative destruction, defines innovation as the ongoing introduction of new combinations that disrupt existing markets and practices (Manavgat & DemiŘci, 2023). Rather than framing innovation as a one-off event, it characterizes it as a continuous force that propels economic and organizational evolution through renewal and adaptation. When applied to the study of innovative work behavior (IWB), this perspective highlights several key elements. To begin with, there is entrepreneurial

orientation. Businesses with entrepreneurial orientation characterized by a willingness to take risks, proactive decision-making and a culture of innovation foster conditions conducive to IWB (Braun & Follert, 2024). Employees in such environments are expected to experiment with new ideas and challenge established norms, embodying the entrepreneurial mindset Schumpeter associated with innovation. Through this, they develop a change-ready and open minded workforce that can explore unconventional ways that are within the culture of the organization. Second is diffusion of innovations. Innovations spread through social networks and knowledge-sharing mechanisms (Schrijvers, Bosma, & Stam, 2024). For example, cross-functional teams accelerate the dissemination of innovative ideas across departments, enhancing collaboration and embedding innovation within organizational culture. Such group action increases the chances of successfully executing new ideas, as the various players will provide different ways of solving the problem.

Third is the infrastructure. From an organizational perspective, the Theory of Innovation underscores the value of flexible structures such as flat hierarchies and open communication channels, which are crucial for encouraging IWB (Ma, Sun, & Yin, 2024). These arrangements minimize barriers to innovation, enabling ideas to flow unconstrained and be effectively transformed into practice. When employees perceive their work environment as supportive and empowering, they are more inclined to engage in innovative behaviors that advance organizational goals. The literature consistently demonstrates that to promote Innovative Workplace Behavior (IWB), organizations may be encouraged to adopt strategic practices informed by the Theory of Innovation such as developing entrepreneurial culture, encourage knowledge sharing, developing flexible and agile organizations.

Developing Entrepreneurial Culture Business must develop the culture of being an entrepreneur and this means being ready to take risks and be proactive. Greco (2023) emphasizes that the employees be encouraged not to be afraid of failure and be creative, this helps employee to generate out of the box ideas and solutions in their tasks and projects.

Promoting Knowledge-Sharing Providing collaborative tools and building cross-departmental teams may be an important promotion of knowledge-sharing practices, which results in greater adoption and integration of innovations throughout the organization (Schrijvers, Bosma, & Stam, 2024).

Formulating Flexible Organizations The companies, which are able to create flexible organizations that possess fewer hierarchies and enable effective communication will be in a position to enhance the agility and edge in the formulation of creative ideas and their implementation (Ma, Sun, & Yin, 2024). Using creative destruction as a strategic concept by Schumpeter would enable organizations to be competitive and sustainable in the market due to their constant innovation and adaptation (Manavgat & DemïRcï, 2023).

3.3. Self-Determination Theory (SDT)

The Self-determination Theory (SDT) formulated by Edward Deci and Richard Ryan connects both the perspectives of intrinsic and extrinsic motivation in the scholarly literature on organizational behavior to explain the predisposition of human behavior (Arshad, Hassan, & Azam, 2024). The framework confirms that the three psychological needs i.e. autonomy, competence and relatedness drive individuals to act in specific manner. Once employees get the satisfaction of these needs, they will have increased intrinsic motivation, which is a cognitive state and is associated in turn with increased involvement in the innovative work behavior. To this end therefore, SDT provides a highly rigorous conceptual lens of inquiry through which employers and organizations can encourage workplace innovation by addressing the psychological needs of their workers. The key to SDT is the supplying it with the autonomy so that the employee gets the freedom to choose and pursue a creative idea. It is a self-driving motivation because this particular type of autonomy allows people to own their creative work (Hackett, 2016; Li et al., 2025). According to Javed et al. (2021), giving the employees the opportunity to select their area of project or methodological preferences contributes greatly to creating the sense of personal investment and responsibility, thereby, boosting IWB. Empirical findings indicate that organizational climates that prioritize autonomy stimulate greater creativity and innovation, thereby generating a more engaged workforce (Hamid, 2022).

The second important psychological need that SDT has described is competence, which is expressed as the support of the workplace culture to the skill-building and mastery of the employees. The conditions that support the process of acquiring skills and strengthening concrete competencies contributing towards confidence that leads employees' involvement in IWB (Javed et al., 2021). The training courses and the feedback mechanisms must be sound to build these competencies in giving the employees the required plans and assuring they get their required skills. In such a case, the intrinsic motivation of the employees increases when they feel competent, this leads to the strengthening of them in their readiness to engage in the process of innovation. Relatedness is the demand of psychological support and place at the workplace. The co-working and supportive relations with other employees encourage the workers to verbalize and exchange their creative ideas (Hamid, 2022). Mature relational networks create a psychological safety environment where people feel free to share their perspectives and participate in the joint problem solving. This, in turn, enhances the organization's overall capacity for innovation.

3.4. Transformational Leadership Theory

Transformational Leadership Theory, articulated by Bernard Bass, is positioned on leaders who motivate employees to prioritize organizational aspirations over personal interests. The orientation is particularly relevant to the promotion of Innovative Work Behavior (IWB) since it puts a particular emphasis on inspirational communication and the provocation of thought, both of which motivate staff to move beyond transactional activities and engage in creative work that is intellectually challenging (Ismail & Mohamed, 2022). Transformational leaders articulate compelling visions that encourage employees to participate actively in creativity and innovation (Zhou et al., 2023). Leaders who explicitly states a goal of achieving breakthrough innovations can align team members' creative efforts with organizational objectives, thereby elevating motivation and commitment. This inspirational vision strengthens collective attention to innovation, encouraging individuals to take calculated risks and pursue novel ideas.

Intellectual stimulation constitutes another pivotal element of transformational leadership that substantially enhances IWB. Leaders who encourage employees to be creative and challenge the existing assumptions, foster the environment that allows the generation of an idea and addressing a problem (Darmawan, Prayekti, & Kusuma, 2024). Transformational leaders encourage an innovative culture whereby new ideas are created and improved by encouraging the employees to embark on new directions and re-evaluate the old ones. Individualized consideration is also practiced by transformational leaders through provision of tailored recognition and support to employees. The practice improves the level of the confidence and willingness to be engaged in IWB (Liao, Zhou, & Yin, 2022). By acknowledging personal contributions and attending to individual needs, leaders foster a sense of worth and authority among employees, enabling them to participate freely in the formulation and application of creative ideas. To harness innovation within an organization, institutions frequently draw upon Transformational Leadership Theory, deploying its core tenets in a variety of ways:

Training Leaders By designing interactive leadership-development programs, employers cultivate transformational leadership behaviors. Leaders who articulate a compelling vision and present intellectual challenges create contexts that unlock employee innovation capacity (Özdaşli, Ceyhan, & Yildirim, 2023).

Encouraging Creative Thinking Leadership at every level ought to nurture intellectual stimulation, an environment in which questioning conventional practices is normative. Brainstorming sessions, innovation workshops and collaborative projects that exceed established boundaries can achieve this goal (Xu & Suntrayuth, 2022).

Individual Support The implementation of the concepts as described in Transformational Leadership Theory through mentorship and providing actionable and personal feedback assists the organization to realize and utilize the inherent strengths. These exist among individuals in boosting of confidence and the creation of psychological safety that can enhance goals for the organizational growth and adaptive responsiveness within a competitive economy (Nielsen, Vidosavljević, & Bošković, 2024).

4. Discussion on Synthesis of Theories for Understanding IWB

A synthesized application of Social Cognitive Theory (SCT), Social Determinism Theory (SDT), Innovation Theory and Transformational Leadership Theory (TLT) provides a holistic and multidimensional model in understanding and developing innovative work behavior (IWB) in context of new product development (NPD) projects. Each of the constructs provides unique, complementary knowledge and the combination of their tenets provides a comprehensive picture of the person, organizational, motivational and leadership factors that underlie IWB. The combined perspective illustrates how these theories converge to provide a synergistic strategy for nurturing innovative behaviors in the dynamic, collaborative context of NPD endeavors. Albert Bandura who developed SCT focuses on the importance of the individual in the terms of self-efficacy and observational learning (Rattanawichai, Wiriyapinit, & Khlaisang, 2022). The higher the self-efficacy of the employees, i.e. confidence in the ability to perform innovative tasks, the more prone they are with initiating and maintaining IWB. Thus, developing new product ideas that could resolve uncertainty in NPD environment specially where problem solving tends to be a repetitive process. Observational learning further amplifies IWB by enabling employees to imitate innovative practices observed in peers or leaders. As an example, when a team member gets his or her idea accepted in the context of a new feature of a product, it encourages other team members to contribute their ideas. Nevertheless, SCT also focuses on the availability of environmental support and the availability of prototyping resources, budget and feedback to work in NPD settings. In the absence of these conditions, individual agency may not be sufficient to keep IWB sustained to the demands of complicated projects.

The Theory of Innovation, grounded in Joseph Schumpeter's concept of creative destruction (Manavgat & DemiŘci, 2023), complements SCT by focusing on organizational-level processes that sustain IWB. Its focus on entrepreneurial orientation and stresses the need to have a culture that promotes risk-taking and proactivity so as to allow employees to innovate with new product designs or processes. Such an orientation empowers individuals to challenge conventional viewpoints and propose disruptive innovations. The diffusion of innovations dimension explains how IWB spreads throughout an organization via social networks and knowledge-sharing mechanisms. As an intermediary, cross-functional teams, which are common in NPD projects, facilitate the speed of ideas adoption and implementation among the departments. Besides, the emphasis on structural support, such as flat hierarchies and open communication channels, in the theory correlates with the requirements of NPD projects in terms of adaptability. In addition, project success requires fast iteration and flow of ideas and the more flexible organizational structure, the more it facilitates the same. The research by Arshad, Hassan and Azam (2024) expands the theory behind the Self-Determination Theory (SDT) and articulates that only those autonomous, competent and relational needs are fulfilled, which supports the intrinsic work behaviors (IWB) in the new product development (NPD) process. Empirical studies indicate that such dimensions of autonomy and self-efficacy likewise predict innovation performance, coinciding with the observation that employees sustain high innovation output when they perceive both autonomy and efficacy (Rattanawichai, Wiriyapinit, & Khlaisang, 2022). This convergence thus fills a gap in the literature that exists on intrinsic motivation and IWB (Li, Zhang, & Yang, 2025).

Besides, studies have demonstrated that a design that supports autonomy, including the delegation of the choice of tasks, enhances intrinsic motivation. Thus, fostering creative problem-solving in NPD environments and a design that sanctions autonomy, including freedom of method selection, makes it easier to implement novel solutions (Javed et al., 2021). Collaborative relationships, which foster relatedness, likewise elevate innovation outcomes by promoting shared identity and collective destiny within NPD teams (Hamid, 2022). Collectively, these findings suggest that SDT met the needs of autonomy, competence and relatedness simultaneously and served as antecedents of IWB and by extension, innovation performance in NPD, further demonstrating the motivational complementarity between the three theories through their common emphasis on individual agency and collective processes. Beyond individual and team-level variables, the literature on leadership as a catalyst of IWB is equally robust (Munir et al., 2025). Specifically, Transformational Leadership Theory (TLT), articulated by Bernard Bass, emphasizes that a leader who articulates a compelling innovation vision, models creative behavior and provides symbolic support thereby facilitating IWB enables teams to respond positively to autonomous environments and subsequently generate novel ideas (Ismail & Mohamed, 2022; Zhou et al., 2023). For instance, when transformational leaders unveil a

compelling product vision, employees are motivated to push creative limits and question existing assumptions, thereby generating out of box ideas (Darmawan, Prayekti, & Kusuma, 2024).

The similarities between TLT and Innovation processes lie in the fact that the former promotes the same features of individualized care, emotional connection and interpersonal feedback that are the characteristics of the former, in line with both models, the self-efficacy model and competency model, developed in the framework of SDT and SCT, respectively. In sum, an organizational climate guided by transformational leadership and supported by environmental enablers such as entrepreneurial culture and flexible structures (Theory of Innovation) synergistically fostering IWB across NPD teams and projects. Combining these opposing and complementary concepts allows us to realize that IWB is not one-dimensional and depends on a set of interacting factors: individual, motivational, organizational and leadership. To this end, effective NPD project management organizations should embrace the holistic approach that fosters intrinsic motivation, fulfils psychological needs, builds competence, builds relatedness and stimulates transformational leadership. In order to provide a comparative synthesis, Table 1 below provides Synthesis of Theories to Understand IWB.

Table 1: Synthesis of Theories for Understanding IWB

Theory	Contribution to IWB	Limitation in Isolation	Added Insight from Synthesis
Social Cognitive Theory (SCT)	Explains *how* innovative behaviors are learned (self-efficacy, observational learning)	Does not explain *why* employees sustain innovative efforts over time	When combined with SDT, we see that self-efficacy only translates into lasting IWB (if autonomy and relatedness are also satisfied)
Self-Determination Theory (SDT)	Explains *why* employees are intrinsically motivated to innovate (autonomy, competence, relatedness)	Overlooks the role of modeling, environmental enablers, and leadership	When integrated with SCT and Leadership Theory, it shows that motivation must be coupled with self-efficacy and leader support to drive IWB
Theory of Innovation	Explains *where* organizational structures and entrepreneurial culture enable innovation	Focuses mainly on organizational context, not individual or leadership dynamics	When paired with SCT/SDT, highlights that innovative structures only foster IWB if individuals feel competent and supported
Transformational Leadership Theory	Explains *who* catalyzes innovation through vision, inspiration, and intellectual stimulation.	Leadership alone cannot sustain IWB without supportive structures or motivated individuals.	Integration reveals that leadership is most effective when aligned with entrepreneurial orientation (Innovation Theory) and intrinsic motivation (SDT).

4.1. Theoretical Contributions

This theoretical review substantively contributes to the body of knowledge of Innovative work behavior and how it is fostered in NPD projects. This review contributes theoretical by unifying different theories specially the four most used theories used in the previous studies on IWB in different settings. By integrating Social Cognitive Theory (SCT), the Theory of Innovation, Self-Determination Theory (SDT) and Transformational Leadership Theory and presenting them in one unified perspective. This paper explains the complexity of IWB process and how it has emerged as major factor in success of NPD projects and how it provides base for theoretical analysis in the future (Arshad, Hassan, & Azam, 2024; Ismail & Mohamed, 2022). This review clearly defines the conceptual progression of general innovation to innovative behavior and finally to IWB. It clearly differentiates these overlapping concepts and thus contribute in promoting enhanced conceptual clarity by providing a structured plan that enables scholars to understand the multi-stage process of IWB at workplace (Rattanawichai, Wiriyapinit, & Khlaisang, 2022).

The explanations and discussions on the application of SCT, SDT, theory of Innovation and Transformational Leadership Theory to IWB lengthens the explanatory influence of each theory beyond its conventional boundaries. SCT's emphasis on self-efficacy and observational learning, provide novel insights for psychological, environmental and behavioral factors that drive innovative work behaviors in NPD contexts (Sangadji & Islami, 2024), while SDT's focus on psychological needs stimulating the requirement of motivational drivers (Li, Zhang, & Yang,

2025). The combination of these theories contribute in fostering an interdisciplinary dialogue among multi-dimensional domains enhancing comprehensive understanding of the factors that encourage innovation as an outcome (Manavgat & DemïRcï, 2023; Zhou et al., 2023). The exclusivity of this synthesis is not in mere combination rather in the nature in which their combination brings focus on the synergy of these theories in fostering of IWB. Specially, the way Social Cognitive Theory explains how employees acquire IWB through self-efficacy, Self-Determination Theory solidifying autonomy as key behavior retention factor, The Theory of Innovation highlighting organizational structures and entrepreneurial orientations as enablers for these behaviors and how Transformational Leadership Theory identifies vision and inspiration as key inspirations for IWB. This symbiotic integration of theories offers a comprehensive explanation and over powers existing single-theory approaches. This synthesis not only enriches theoretical clarity but also generate potential opportunities for empirical inquiries like, examining how self-efficacy and psychological empowerment (SCT) translates into sustained IWB under the conditions of autonomy support (SDT) or through entrepreneurial orientation (Innovation Theory) of the leaders. Thus, the frameworks generate countless possibilities for the researchers to further contribute to the existing body of knowledge of antecedents and outcomes of IWB in the context of new product development.

4.2. Practical Contributions

The following review has practical implication to practitioners desiring to develop IWB within organizations, and particularly in NPD initiatives.

Employee Growth Initiatives The organizations are also able to develop IWB via special training programs that enhances self-efficacy (SCT) and competence (SDT). They can build more confidence in performing innovative actions with the help of creativity workshops and technical skills improvement workshops (Javed et al., 2021).

Training Leaders to Lead Innovation Training leaders to adopt transformational leadership practices, such as inspirational motivation and intellectual stimulation, can significantly enhance IWB. By fostering a vision for innovation and encouraging creative thinking, leaders can inspire employees to pursue novel ideas (Darmawan, Prayekti, & Kusuma, 2024; Ismail & Mohamed, 2022).

Developing a Culture Nurturing Creativity and Innovation Promoting an entrepreneurial orientation, as emphasized by the Theory of Innovation and granting autonomy, as advocated by SDT, can create an organizational climate conducive to innovation. This kind of culture will allow risk-taking and empower employees to come up with creative solutions and implement these creative ideas effectively (Braun & Follert, 2024; Li, Zhang, & Yang, 2025).

Development of Flexi Structures based on Communication The flexible organization structures based on open channels of communication, cross-functional teams, employees' and organizational agility, should be designed in a manner that will quickly and effectively adapt and aid transmission of innovative ideas. The mechanisms will enable adequate sharing and implementation of ideas, which is a key to NPD success (Ma, Sun, & Yin, 2024; Schrijvers, Bosma, & Stam, 2024).

4.3. Limitations of the Study

This theoretical review on fostering IWB has contributed to the study of IWB both theoretically and practically, however, there are still a number of limitations of this study.

Empirical Limitations This review is basically a theoretical review and lacks major input from the empirically proven evidences. Thus, there is limitation of this study to establish empirical validity of the suggested combined framework. Therefore, further empirical studies are required to validate this synthesized framework (Rattanawichai, Wiriyapinit, & Khlaisang, 2022).

Theoretical Limitations The focus on four theories SCT, Theory of Innovation, SDT and Transformational Leadership Theory may exclude other relevant

frameworks, such as the Job Demands-Resources Model and RBV, which could offer additional insights into IWB dynamics (Wibowo, 2022).

Contextual Limitations The four theories in this study may not take place jointly across all industries or in different cultural setups. This level of variation and also the variation in organization sizes are not taken into full consideration through this review, thus limiting the scope of application of this review (Hamid, 2022).

Generalizability Limitations The findings and results of this review are based on generalized assumptions and are not solely based on empirical evidences in specific industrial or organizational settings and may vary across different contexts of various NPD projects (Ma, Sun, & Yin, 2024).

4.4. Future Research Directions

Further and deeper investigation into the field of Innovative Work Behavior (IWB) requires focusing on a number of pathways.

Cross Cultural Studies Cultural dimensions, in particular collectivism versus individualism need to be examined in order to gauge how this affects IWB in general and within different organizations and domain. These kind of research would expand the usefulness and generalizability of the study (Ismail & Mohamed, 2022).

Longitudinal Study It is necessary to establish the validity of IWB initiatives and the sustainability of the knowledge generated by using longitudinal research designs. Such studies would highlight the enduring effects of organizational and leadership practices that foster IWB (Zhou et al., 2023).

Novel Technologies Implications The impact of emerging technologies including artificial intelligence and machine learning on IWB warrants investigation, as these tools may create novel avenues for advancing innovation within new product development projects (Schrijvers, Bosma, & Stam, 2022).

Interdisciplinary Frameworks Inclusion of other disciplines like psychology, sociology, management will be crucial in framing better models of IWB that are more comprehensive. This interdisciplinary fusion captures the intricate interplay among diverse influences on innovative work behavior (Manavgat & DemïRcï, 2023).

Multi Stage Testing Innovative work behavior is a complex process and empirical studies based on multi stage frameworks can better explain the IWB fostering process in NPD projects. These frameworks may be based on single theory or through complex integration of different theories.

Empirical Validity There is a strong requirement for empirically validate the concept of fostering IWB, firstly through single theory lens in NPD projects setting and then through multi theory settings (Wibowo, 2022).

4.5. Testable Hypotheses

Constructing on the theoretical synthesis of our four focused theories there are potential opportunities for further empirical research. IWB in NPD projects is a multidimensional construct that is designed based on cognitive, motivational and structural dynamics. In order to further extend this integrated framework, hypotheses that can be tested in the future in multi-level studies incorporating individual, team and organizational constructs can be hypothesized. At Individual level, self- efficacy and intrinsic motivation interact to affect IWB and we may hypothesize:

H1: Employees' self-efficacy (SCT) is positively associated with their innovative work behavior and this relationship is strengthened when autonomy support (SDT) is high.

H2: Intrinsic motivation (SDT) mediates the relationship between self-efficacy (SCT) and innovative work behavior in NPD projects.

At the leadership level, the role of transformational leaders becomes critical and we hypothesize:

H3: Transformational leadership is positively related to employees' innovative work behavior and this relationship is mediated by employees' self-efficacy (SCT).
H4: Transformational leadership moderates the relationship between intrinsic motivation (SDT) and innovative work behavior, such that the effect is stronger under high transformational leadership.

At the organizational level, structural and cultural enablers of innovation further reinforce these dynamics and we may hypothesize:

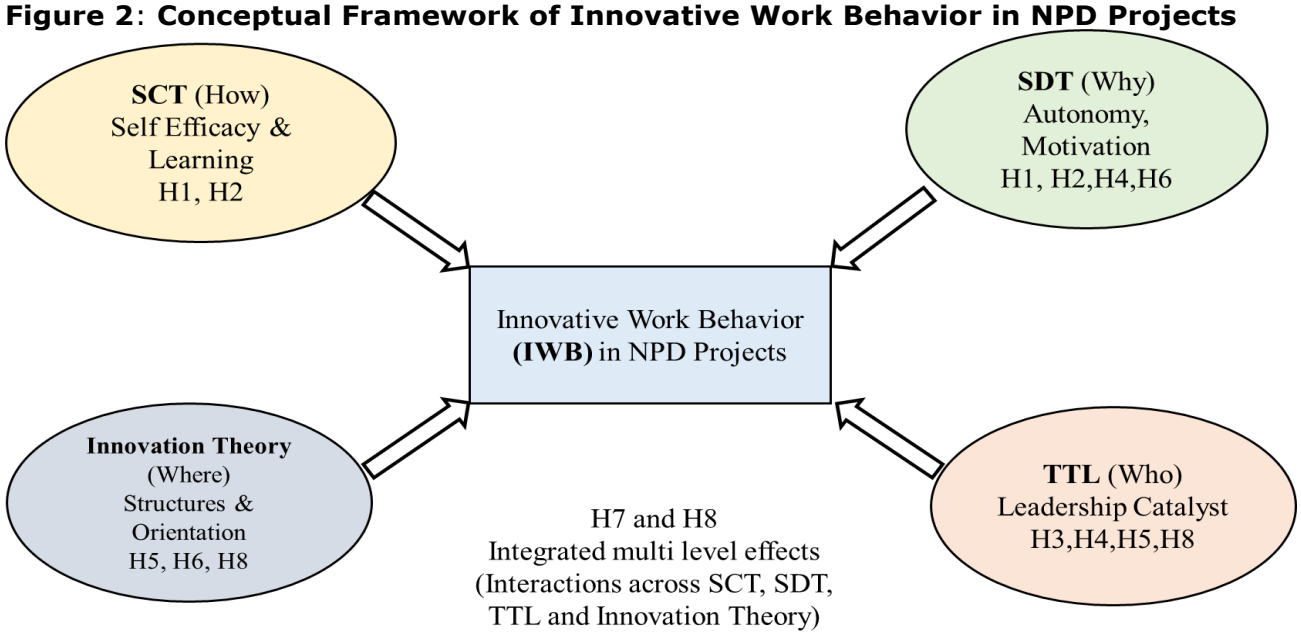
H5: Organizational entrepreneurial orientation (Innovation Theory) positively moderates the relationship between transformational leadership and innovative work behavior in NPD projects.
H6: Cross-functional collaboration within NPD teams mediates the effect of autonomy support (SDT) on innovative work behavior.

In addition, shifting to multilevel perspective, it may be hypothesized as:

H7: The joint presence of high self-efficacy (SCT), autonomy support (SDT), transformational leadership (TLT) and entrepreneurial orientation (Innovation Theory) predicts the highest levels of innovative work behavior in NPD projects.
H8: The impact of self-efficacy on innovative work behavior is contingent upon both leadership (TLT) and structural support (Innovation Theory), reflecting a three-way interaction.

By stating these proposed hypotheses, this review will help establish a set of directions to be followed in carrying out empirical research that will affirm the integrative framework of IWB in the context of NPD. A conceptual framework is shown below to give a visual understanding of these hypotheses.

Figure 2: **Conceptual Framework of Innovative Work Behavior in NPD Projects**



Source: Authors Own Conceptualization (2025)

5. Conclusion

This theoretical review undertakes a systematic examination of the conceptual trajectory from innovation to innovative work behavior (IWB), explaining the salient individual, organizational and environmental factors that fosters IWB, particularly within the context of new product development projects. By integrating Social Cognitive Theory, the Theory of Innovation, Self-Determination Theory and Transformational Leadership Theory, the present study advances a robust and cohesive framework for understanding the

multifaceted dynamics of IWB. This framework, articulated through a conceptual model and a summary table, demonstrates the synergistic interaction of individual agency, motivational needs, leadership practices and organizational structures in promoting innovative work behavior. The theoretical contributions clarify conceptual boundaries and provide support for an interdisciplinary approach, whereas the practical implications offer actionable strategies for practitioner's intent on fostering innovation. Despite the inevitability of the constraints on any theoretical construction (lack of empirical verification and inconsistency in context), the proposed framework can serve as a decent foundation for the future research. Moreover, scholars are encouraged to extend the present insights by examining cross-cultural, longitudinal and technologically driven dimensions of IWB, thereby enriching the field and supporting organizational innovation. Thus, this theoretical review not only extends the theoretical synthesis of the understudy theories within the context of IWB in NPD projects, but also suggests future hypotheses for further empirical studies and practical applications.

References

Abdrabou, H., & El-said Ghonem, N. (2023). Effect of Pro-Innovative Characteristics on Nurses' Innovative Behavior and Their Perceived Work Role Performance. *Assiut Scientific Nursing Journal*, *0*(0), 0-0. https://doi.org/10.21608/asnj.2023.195902.1529

Agazu, B. G., & Kero, C. A. (2024). Innovation strategy and firm competitiveness: a systematic literature review. *Journal of Innovation and Entrepreneurship*, *13*(1), 24. https://doi.org/10.1186/s13731-024-00381-9

Agustina, L., & Zainuddin, M. EMPATHY: Jurnal Fakultas Psikologi.

Ahmed, F., Naqshbandi, M. M., Waheed, M., & Ain, N. U. (2024). Digital leadership and innovative work behavior: impact of LMX, learning orientation and innovation capabilities. *Management Decision*, *62*(11), 3607-3632. https://doi.org/10.1108/MD-04-2023-0654

Ali Abd Elhamed, R., & M .Badran, F. (2024). Ambidextrous Leadership and its Relation to Innovative Work Behavior among Staff Nurses. *Egyptian Journal of Health Care*, *15*(2), 1762-1772. https://doi.org/10.21608/ejhc.2024.386367

Alshahrani, I. (2024). Integration of innovative work behavior through transformational leadership in the Saudi healthcare sector: a systematic review. *Arab Gulf Journal of Scientific Research*, *42*(3), 481-497. https://doi.org/10.1108/AGJSR-02-2023-0078

Anwer, S., & Hyder, M. (2024). Navigating sustainable innovation: exploring the interplay between workplace happiness and the dynamics of leadership, empowerment and organizational culture in the context of green management and circular economy. *THE ASIAN BULLETIN OF GREEN MANAGEMENT AND CIRCULAR ECONOMY*, *4*(1), 44-61. https://doi.org/10.62019/abgmce.v4i1.61

Arifin, N. N. A. B. M., Salleh, R. B., & Saleem, M. S. (2024). Fostering Innovative Work Behavior through Job Autonomy and Employee Work Passion: Moderating Role of Communication Climate. *Business Management and Strategy*, *15*(2), 98. https://doi.org/10.5296/bms.v15i2.22009

Arshad, B., Hassan, H., & Azam, A. (2024). The impact of employees' experience of high-performance work systems on innovative behavior in professional service firms. *Frontiers in Psychology*, *14*, 1324474. https://doi.org/10.3389/fpsyg.2023.1324474

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Bauwens, R., Audenaert, M., & Decramer, A. (2024). Performance management systems, innovative work behavior and the role of transformational leadership: an experimental approach. *Journal of Organizational Effectiveness: People and Performance*, *11*(1), 178-195. https://doi.org/10.1108/JOEPP-03-2022-0066

Braslina, L., Danusevics, M., Batraga, A., Legzdina, A., Skiltere, D., Salkovska, J., Braslins, G., Danovics, V., & Saktina, D. (2022). LEARNING FOR EMPLOYMENT – ANALYSIS OF THE COMPONENTS FORMING THE SUCCESSFUL PRODUCT INNOVATION IN ENTREPRENEURSHIP. *RURAL DEVELOPMENT 2019*, *2021*(1), 333-338. https://doi.org/10.15544/RD.2021.058

Braun, E., & Follert, F. (2024). The calculating entrepreneur — The role of economic calculation in supporting alertness and creative destruction. *Managerial and Decision Economics*, *45*(8), 5668-5678. https://doi.org/10.1002/mde.4341

Chen, R. (2024). Mechanisms of Participatory Management on Employee-Initiated Innovation: A Moderated Mediation Model. In S. H. B. D. M. Zailani, K. Yagapparaj, & N. Zakuan (Eds.), *Proceedings of the 2023 4th International Conference on Management Science and Engineering Management (ICMSEM 2023)* (Vol. 259, pp. 1591-1603). Atlantis Press International BV.

Cheng, J., Jie, X. W., & Dou, B. W. (2025). RESEARCH ON THE INFLUENCE OF TRANSFORMATIONAL LEADERSHIP AND ORGANIZATIONAL MOTIVATION ON EMPLOYEE INNOVATIVE BEHAVIOR IN HIGH-TECH ENTERPRISES. *The EUrASEANs: journal on global socio-economic dynamics*(2(51)), 466-477. https://doi.org/10.35678/2539-5645.2(51).2025.466-477

Chirumalla, K. (2021). Building digitally-enabled process innovation in the process industries: A dynamic capabilities approach. *Technovation*, *105*, 102256. https://doi.org/https://doi.org/10.1016/j.technovation.2021.102256

Cui, G., Wang, F., & Zhang, Y. (2023). Buffer or boost? the role of openness to experience and knowledge sharing in the relationship between team cognitive diversity and members' innovative work behavior. *Current Psychology*, *42*(29), 25233-25245. https://doi.org/10.1007/s12144-022-03633-7

Darmawan, A. R., Prayekti, P., & Kusuma, N. T. (2024). THE INFLUENCE OF TRANSFORMATIONAL LEADERSHIP, ORGANIZATIONAL FIT, KNOWLEDGE SHARING BEHAVIOR ON INNOVATIVE WORK BEHAVIOR IN EMPLOYEES OF THE BANTUL DISTRICT YOUTH EDUCATION AND SPORTS OFFICE. *International Conference of Business and Social Sciences*, 707-716. https://doi.org/10.24034/icobuss.v4i1.555

Dayanti, P. R., & Yulianti, P. (2023). How Do Servant Leadership and Knowledge Sharing Trigger Innovative Work Behaviors among Millennials at Start-up Businesses? *Jurnal Manajemen Teori dan Terapan| Journal of Theory and Applied Management*, *16*(1), 95-106. https://doi.org/10.20473/jmtt.v16i1.43224

de la Fuente, J., Kauffman, D. F., & Boruchovitch, E. (2023). Past, present and future contributions from the social cognitive theory (Albert Bandura). In (Vol. 14, pp. 1258249): Frontiers Media SA.

Ebrahim, Z. B., Ismail, I., & Kassim, E. S. (2023). A Conceptual Review of the Determinants of Employee Innovative Work Behavior. *Information Management and Business Review*, *15*(4(SI)I), 239-257. https://doi.org/10.22610/imbr.v15i4(SI)I.3598

Farrukh, M., Meng, F., Raza, A., & Wu, Y. (2023). Innovative work behaviour: the what, where, who, how and when. *Personnel Review*, *52*(1), 74-98. https://doi.org/10.1108/PR-11-2020-0854

Greco, A. J. (2023). How creative destruction keeps churning. *Economic Affairs*, *43*(3), 445-451. https://doi.org/10.1111/ecaf.12593

Hamid, M. (2022). Organisational Learning, Privacy Concern, Innovation Capability Impact on Creative Performance. *Journal of Digitovation and Information System*, *2*(2), 122-138. https://doi.org/10.54433/JDIIS.2022100017

Ismail, Z., & Mohamed, W. (2022). Organizational Climate in Relation to Head Nurses' Innovative Work Behaviors: Mediating Role of Organizational Innovativeness. *Zagazig Nursing Journal*, *18*(2), 146-161. https://doi.org/10.21608/znj.2022.266637

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, *73*(3), 287-302. https://doi.org/10.1348/096317900167038

Javed, B., Fatima, T., Khan, A. K., & Bashir, S. (2021). Impact of Inclusive Leadership on Innovative Work Behavior: The Role of Creative Self-Efficacy. *The Journal of Creative Behavior*, *55*(3), 769-782. https://doi.org/10.1002/jocb.487

Jun, K., & Lee, J. (2023). Transformational Leadership and Followers' Innovative Behavior: Roles of Commitment to Change and Organizational Support for Creativity. *Behavioral Sciences*, *13*(4), 320. https://doi.org/10.3390/bs13040320

Jusufi, A. (2023). RELATIONSHIP BETWEEN INNOVATION AND FINANCIAL PERFORMANCE IN THE GLOBAL ENVIRONMENT OF EXPORTING COMPANIES. *Journal of Liberty and International Affairs, Institute for Research and European Studies - Bitola*, *9*(2), 89-105. https://doi.org/10.47305/JLIA2392089j

Khan, M. M., Ahmed, S. S., & Khan, E. (2021). The Emerging Paradigm of Leadership for Future: The Use of Authentic Leadership to Lead Innovation in VUCA Environment. *Frontiers in Psychology*, *12*, 759241. https://doi.org/10.3389/fpsyg.2021.759241

Kim, J. Y., & Yoon, D.-Y. (2025). How transformational leadership of managers affects employee innovative behavior in IT corporations. *Frontiers in Psychology*, *16*, 1565307. https://doi.org/10.3389/fpsyg.2025.1565307

Kusumawijaya, I. K., & Astuti, P. D. (2023). The effect of human capital on innovation: the mediation role of knowledge creation and knowledge sharing in small companies.

Knowledge and Performance Management, *7*(1), 64. https://doi.org/https://doi.org/10.21511/kpm.07(1).2023.05

Laily, N., Wahyuni, D. U., Koesmono, T., & Sari, J. (2023). Modelling Organizational Performance Manufacturing Companies in Indonesia: Feature Extraction. *International Journal of Professional Business Review*, *8*(2), e01506. https://doi.org/10.26668/businessreview/2023.v8i2.1506

Laksana, D. H., Apriliado, S., & Kusmantini, T. (2022). Influence of Market Orientation, Learning Orientation, and Innovation Capabilities and Their Impact on Competitive Advantage and Company Performance. *Journal of The Community Development in Asia*, *5*(2). https://doi.org/10.32535/jcda.v5i2.1492

Le, P. B. (2024). Applying knowledge-based human resource management to drive innovation: the roles of knowledge sharing and competitive intensity. *Management Research Review*, *47*(4), 602-621. https://doi.org/10.1108/MRR-02-2023-0154

Li, C., Makhdoom, H. U. R., & Asim, S. (2020). Impact of entrepreneurial leadership on innovative work behavior: Examining mediation and moderation mechanisms. *Psychology Research and Behavior Management*, 105-118.

Li, C., Murad, M., Ashraf, S. F., & Jiatong, W. (2024). Leadership styles, team innovative behavior, and new green product development performance. *Management Decision*, *62*(10), 3208-3234. https://doi.org/10.1108/MD-06-2023-0935

Li, K., Wijaya, T. T., Chen, X., & Harahap, M. S. (2024). Exploring the factors affecting elementary mathematics teachers' innovative behavior: an integration of social cognitive theory. *Scientific Reports*, *14*(1), 2108. https://doi.org/10.1038/s41598-024-52604-4

Li, M., & Ye, H. (2021). Temporal Leadership and Bootlegging Behavior of Employees: The Mediating Effect of Self-Efficacy. *Frontiers in Psychology*, *12*, 633261. https://doi.org/10.3389/fpsyg.2021.633261

Li, Y., Zhang, Q., & Yang, W. (2025). Crucial role of craftsmanship spirit in fostering innovative behavior among skilled talents in the manufacturing sector. *Frontiers in Psychology*, *15*, 1407426. https://doi.org/10.3389/fpsyg.2024.1407426

Liao, G., Zhou, J., & Yin, J. (2022). Effect of Organizational Socialization of New Employees on Team Innovation Performance: A Cross-Level Model. *Psychology Research and Behavior Management*, *Volume 15*, 1017-1031. https://doi.org/10.2147/PRBM.S359773

Lisetyaningrum, & Padmantyo, S. (2024). The Influence of Knowledge Management, Organizational Learning, and Risk Taking on Organizational Performance: Positive Innovation Outcomes as an Intervening Variable. In H. Maulana, M. Sholahuddin, M. Anas, & Z. Zulfikar (Eds.), *Proceedings of the International Conference on Economics and Business Studies (ICOEBS-22-2)* (Vol. 247, pp. 949-963). Atlantis Press International BV.

Liu, Z. (2023). The Relationship between Innovation and Strategy. *SHS Web of Conferences*, *178*, 03018. https://doi.org/10.1051/shsconf/202317803018

Loucanova, E., Olsiakova, M., & Palus, H. (2022). THE RELATIONSHIP OF INNOVATION AND THE PERFORMANCE OF BUSINESS LOGISTICS IN THE EU. *Acta logistica*, *09*(04), 479-485. https://doi.org/10.22306/al.v9i4.355

Ma, R., Sun, J., & Yin, J. (2024). Research on the Impact Mechanism of Smart City Construction on Economic Growth—An Analysis Based on the Schumpeterian Innovation Theory Framework. *Systems*, *12*(7), 251. https://doi.org/10.3390/systems12070251

Mahmood, S., Iqbal, A., El-kenawy, E.-S. M., Eid, M. M., Alhussan, A. A., & Sami Khafaga, D. (2025). The impact of green technology innovation, pro-environmental behavior and eco-design on green new product success: examine the moderating role of green corporate image. *Environmental Research Communications*, *7*(1), 015028. https://doi.org/10.1088/2515-7620/adaaca

Malik, I. A., Mehraj, D., U Nissa, V., & Wani, A. K. (2025). Unveiling the Dynamics of Sustainable Development: A Holistic Examination of Green Organizational Learning, Innovation, and Performance in Indian SMEs. *Business Strategy & Development*, *8*(1), e70060. https://doi.org/10.1002/bsd2.70060

Manavgat, G., & DemiRci, A. (2023). Comparing the efficiency of technology and innovation of the EU and selected countries: the effects of EU framework programs. *International Journal of Innovation*, *11*(2), 1-32. https://doi.org/10.5585/2023.23741

Marić, I., Aleksić, A., & Knežević, M. (2022). Enhancing Sustainable Development: Examining Factors That Foster Creativity and Productivity in Organizations. *Sustainability*, *14*(15), 9094. https://doi.org/10.3390/su14159094

Mohammad, A. J. (2015). *The effect of audit committee and external auditor characteristics on financial reporting quality* Master Thesis, Universiti Utara Malaysia].

Mohammad, A. J., & Ahmed, D. M. (2017). The impact of audit committee and external auditor characteristics on financial reporting quality among Malaysian firms. *Research Journal of Finance and Accounting*, *8*(13), 9-16.
Munir, S., Anser, M. K., Shah, S. T. H., Islam, T., & Zaman, K. (2025). Emotional intelligence, support, and organizational culture's impact on decision-making: mediation and moderation analysis in academia. *Discover Education*, *4*(1), 269. https://doi.org/10.1007/s44217-025-00720-2
Nguyen, H. M., Ho, T. K. T., & Ngo, T. T. (2024). The impact of service innovation on customer satisfaction and customer loyalty: a case in Vietnamese retail banks. *Future Business Journal*, *10*(1), 61. https://doi.org/10.1186/s43093-024-00354-0
Nielsen, J. E., Vidosavljević, J., & Bošković, N. (2024). Employee innovation in the context of strategic change implementation in the service sector. *Менаџмент у хотелијерству и туризму*, *12*(1), 61-77.
Nuryanto, U. W., Basrowi, B., & Quraysin, I. (2024). Big data and IoT adoption in shaping organizational citizenship behavior: The role of innovation organizational predictor in the chemical manufacturing industry. *International Journal of Data and Network Science*, *8*(1), 225-268. https://doi.org/10.5267/j.ijdns.2023.9.026
Özdaşli, K., Ceyhan, S., & Yildirim, D. (2023). THE EFFECT OF ORGANİZATIONAL CULTURE ON INNOVATIVE WORK BEHAVIOR: THE MEDIATOR ROLE OF TRUST IN MANAGERS. *Mehmet Akif Ersoy Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *10*(2), 1479-1500. https://doi.org/10.30798/makuiibf.1249986
Pradana, M., Silvianita, A., Syarifuddin, S., & Renaldi, R. (2022). The Implication of Digital Organisational Culture on Firm Performance. *Frontiers in Psychology*, *13*, 840699. https://doi.org/10.3389/fpsyg.2022.840699
Quang, H. T., Ngoc, T. T. T. D. T., & Huyen, H. T. (2022). THE INFLUENCE OF INDIVIDUAL FACTORS ON EMPLOYEES'INNOVATIVE WORK BE-HAVIOR IN VIETNAMESE ORGANIZA-TIONS1.
Ragmoun, W. (2024). The Analysis of Trigger Factors of the Environmental Entrepreneurship Process in Saudi Arabia: An Innovative Approach. *Economies*, *12*(9), 254. https://doi.org/10.3390/economies12090254
Ragmoun, W., & Alfalih, A. A. (2024). Inclusive Special Needs Education and Happiness of Students with Physical Disabilities in Saudi Arabia: The Role of School Satisfaction and Self-Concept. *Education Sciences*, *14*(2), 209. https://doi.org/10.3390/educsci14020209
Rattanawichai, N., Wiriyapinit, M., & Khlaisang, J. (2022). Success factors to promote innovative behavior in organizations. *European Conference on Management Leadership and Governance*, *18*(1), 499-505. https://doi.org/10.34190/ecmlg.18.1.698
Salsabila, Z. H., & Mansyur, A. (2024). Innovative work behavior: Role of organizational climate and employee creativity. *Jurnal Fokus Manajemen Bisnis*, *14*(1), 71-83. https://doi.org/10.12928/fokus.v14i1.9491
Sangadji, E. M., & Islami, M. I. (2024). Does Flexible Human Resource Management Promote Firm Innovativeness? The Mediating Role of Innovative Work Behavior and Organizational Learning Capability. *Quality-Access to Success*, *25*(198).
Sari, N. F. P., & Wahyuni, S. (2023). The role of mediation and moderation in the sharing of knowledge and work centrality effects of employee creativity on innovative work behavior. *International Journal of Economics, Business and Management Research*, *7*(6), 44-56. https://doi.org/https://doi.org/10.51505/IJEBMR.2023.7604
Schrijvers, M. T., Bosma, N. S., & Stam, E. (2022). Entrepreneurial Ecosystems and Structural Change in European Regions.
Schrijvers, M. T., Bosma, N. S., & Stam, E. (2024). Entrepreneurial Ecosystems and Structural Change in European Regions. In R. Huggins, P. Thompson, F. Kitagawa, C. Theodoraki, & D. Prokop (Eds.), *Entrepreneurial Ecosystems in Cities and Regions* (1 ed., pp. 171-187). Oxford University PressOxford.
Shafiq, M. N., & Zafar, M. A. (2023). Unraveling the Dynamics of BRICS: A Comprehensive Analysis of CO2 Emissions, Energy Consumption, and Technological Innovation. *iRASD Journal of Energy & Environment*, *4*(2), 91-100. https://doi.org/10.52131/jee.2023.0402.0038
Siddiqui, F., Anwer, N., John, A., & Osaid Rabie, M. (2024). The Role of Human Capital in Fostering Organizational Ambidexterity: A Study of IT Firms in Pakistan. *Journal of Asian Development Studies*, *13*(1), 491-503. https://doi.org/10.62345/jads.2024.13.1.41

Šlogar, H., Morić Milovanović, B., & Hrvatin, S. (2023). Does the Relationship between Entrepreneurial Orientation and Subjective Financial Firm Performance Have an Inverted U-Shape? Evidence from Southeast European SMEs. *Administrative Sciences*, *13*(2), 26. https://doi.org/10.3390/admsci13020026

Sokman, Y., Azizan, N., Othman, A. K., Musa, M. H., Abdul Aziz, A., & Sakkanayok, K. (2022). Exploring Online Environment: The Case For Social Cognitive Theory. *International Journal of Academic Research in Business and Social Sciences*, *12*(9), Pages 1352-1371. https://doi.org/10.6007/IJARBSS/v12-i9/14761

Sơn, Đ. B. (2023). Knowledge sharing, intellectual capital and employee innovative behavior: A study of information technology industry in Ho Chi Minh City. *VNUHCM Journal of Economics-Law and Management*, *7*(1), 4142-4153.

Sueb, Mukhlis, I., & Murwani, F. D. (2024). The Impact of Leadership, Organizational Culture, and Innovative Work Behavior on Employee Performance in Teak MSME Centers in Pasuruan. *Jurnal Multidisiplin Madani*, *4*(5), 598-606. https://doi.org/10.55927/mudima.v4i5.9195

Sun, X., Dong, Y., Shafiq, M. N., Gago-de Santos, P., & Gillani, S. (2025). Economic policy uncertainty and environmental quality: unveiling the moderating effect of green finance on sustainable environmental outcomes. *Humanities and Social Sciences Communications*, *12*(1), 801. https://doi.org/10.1057/s41599-025-05212-0

Toscano, F., Giusino, D., Diana, R., & Rahimi Pordanjani, T. (2023). The Role of Emotional Regulation in the Relationship between Nurses' Creative Style and Innovation Behaviors: A Cross-Sectional Study. *Nursing Reports*, *13*(2), 811-822. https://doi.org/10.3390/nursrep13020071

Wang, F., Gillani, S., Balsalobre-Lorente, D., Shafiq, M. N., & Khan, K. D. (2025). Environmental degradation in South Asia: Implications for child health and the role of institutional quality and globalization. *Sustainable Development*, *33*(1), 399-415. https://doi.org/10.1002/sd.3124

Wang, F., Gillani, S., Razzaq, A., Nazir, R., Shafiq, M. N., & Li, B. (2024). Synergistic impacts of technological advancement and environmental hazards on social change and human well-being in South Asia. *Technological Forecasting and Social Change*, *208*, 123721. https://doi.org/10.1016/j.techfore.2024.123721

Wang, H., Chen, M., & Li, X. (2021). Moderating Multiple Mediation Model of the Impact of Inclusive Leadership on Employee Innovative Behavior. *Frontiers in Psychology*, *12*, 666477. https://doi.org/10.3389/fpsyg.2021.666477

Wibowo, M. A. (2022). The Approach of Social Innovation Agility: A Dynamic Capability Strategy. *Calitatea*, *23*(188), 1-8.

Xia, H., Li, J., Weng, J., Zhang, Z. J., & Gao, Y. (2021). Collaborative knowledge sharing in global distributed teams: antecedents of innovation performance. *Journal of Knowledge Management*, *25*(10), 2523-2539. https://doi.org/10.1108/JKM-10-2020-0763

Xu, Z., & Suntrayuth, S. (2022). Innovative work behavior in high-tech enterprises: Chain intermediary effect of psychological safety and knowledge sharing. *Frontiers in Psychology*, *13*, 1017121. https://doi.org/10.3389/fpsyg.2022.1017121

Yang, X., Shafiq, M. N., Nazir, R., & Gillani, S. (2024). Unleashing the Influence Mechanism of Technology Innovation and Human Development for Ecological Sustainability in Emerging Countries. *Emerging Markets Finance and Trade*, *60*(10), 2276-2299. https://doi.org/10.1080/1540496X.2024.2308180

Yang, X., Shafiq, M. N., Sharif, A., Gillani, S., & Zeng, X. (2024). Balancing progress and preservation: analyzing the role of technological innovation in mitigating environmental degradation caused by energy consumption in China. *Economic Analysis and Policy*, *84*, 391-409. https://doi.org/10.1016/j.eap.2024.09.001

Zhou, F., Long, K., Shen, H., Yang, Z., Yang, T., Deng, L., & Zhang, J. (2023). Resilience, organizational support, and innovative behavior on nurses' work engagement: a moderated mediation analysis. *Frontiers in Public Health*, *11*, 1309667. https://doi.org/10.3389/fpubh.2023.1309667