

Innovation performance of small and medium enterprises: The impact of transformational leadership and work engagement in small and medium manufacturing enterprises in the Greater Kampala Metropolitan Area, Uganda

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ABSTRACT

The purpose of this paper is to explore the relationship between transformational leadership, work engagement, and innovation performance in the context of small and medium manufacturing enterprises in the Greater Kampala Metropolitan Area, Uganda. This study was grounded in the upper echelons theory and social exchange theory. A cross-sectional research design was employed to collect data from 326 small and medium-sized manufacturing enterprises in the Greater Kampala Metropolitan Area, Uganda. Data were collected using a structured, self-administered questionnaire. The data were analysed using the Statistical Package for the Social Sciences (version 27) and the Hayes Process Macro (version 4.2). The findings indicate that transformational leadership ($\beta = .509, p < .001$) and work engagement ($\beta = .256, p < .001$) have a positive and significant influence on innovation performance. The results revealed that transformational leadership significantly predicts work engagement ($\beta = .543, p < .001$). Work engagement significantly mediated the relationship between transformational leadership and innovation performance ($\beta = .135, 95\% \text{ Boot CI} = .073, .206$). The study concludes that work engagement mediates the relationship between transformational leadership and innovation performance. Owner-managers seeking to enhance the innovation performance of their SMEs should attend leadership symposia to improve their transformational leadership behaviour. Creating an atmosphere where employees' needs are catered to, they can express themselves, trust is built, and relationships are fostered, making employees feel part of the firm and resulting in more innovative initiatives. This study advances understanding of innovation performance in manufacturing SMEs in developing countries, particularly Uganda.

Keywords: Innovation Performance, Small and Medium Enterprises, Transformational Leadership, Work Engagement

I. INTRODUCTION

Innovation has continued to increase the survival, thriving, and creating competitive advantage of firms (Farida & Setiawan, 2022; Ferreira & Coelho, 2020) in the face of rapid technological changes, global economic integration, and changing market demand (Kaplinsky & Kraemer-Mbula, 2022; Wu *et al.*, 2022). Innovation entails "a firm's ability to create new products, work processes, markets, and management procedures" (Hanaysha *et al.*, 2022; Le & Lei, 2019; Organisation of Economic Cooperation and Development (OECD) Oslo Manual, 2005; Tidd, 2023). The firm's success depends on its innovation ability in order to be abreast with the changing business environment (Andersson *et al.*, 2020; Sawaeen & Ali, 2020) Many manufacturing firms have realised that enhancing their innovation performance is of the essence (Hanifah *et al.*, 2020; Pomegbe *et al.*, 2020) as many are finding ways to improve this, although the majority are still limited and struggle in their innovation pursuit (Adomako & Nguyen, 2020; Oduro, 2020). This is particularly true in developing countries, where the majority of manufacturing firms are small and medium-sized, often constrained by resource limitations and limited financial access (Endris & Kassegn, 2022; Eton *et al.*, 2021). Such challenges have heightened academicians' quest to identify less costly factors to enhance SMEs' innovation performance.

Small and medium-sized enterprises play an important role in innovation due to their dynamism, which enables them to adapt quickly and flexibly (Heider *et al.*, 2021). SMES are key drivers of job creation, economic growth, and innovation (Gherghina *et al.*, 2020). In the global economy, businesses comprise 90% of SMEs (Batrancea *et al.*, 2022; Melo *et al.*, 2023). However, small and medium-sized enterprises are less efficient and exhibit lower levels of innovation than large firms (Hervás-Oliver *et al.*, 2021; Radicic & Petković, 2023; Vives, 2022), particularly in emerging and developing economies compared to developed ones (Dey *et al.*, 2020).

In the Ugandan context, research highlights the weak capabilities of current STI as well as an underdeveloped national innovation system in all enterprises (Mulumba *et al.*, 2023; National Planning Authority (NPA), 2020), and

manufacturing SMEs operate under capacity due to sales decline accruing from low demand for locally manufactured goods (Sserunjogi *et al.*, 2021). Specifically, business expenditure on research and development was 0.01%, resulting in 250 patent applications, of which only two were registered (Jjagwe *et al.*, 2024). Despite the importance of innovation performance to the growth, survival, and sustainability of SMEs, studies on IP regarding leadership in Ugandan SMEs are scarce. Little attention is given to research on IP in manufacturing SMEs in Uganda. Existing studies have looked at innovation in terms of inputs (Ahimbisibwe *et al.*, 2024; Kagere *et al.*, 2025; Mugisha & Ijjo, 2022) and process (Bakashaba *et al.*, 2024; Mulumba *et al.*, 2023), and there is a lack of research on innovation as an output, thus necessitating investigating innovation performance from the organisational context in manufacturing SMEs.

Previous studies have identified leadership as a crucial factor in innovation performance (Alblooshi *et al.*, 2021; Cortes & Herrmann, 2021; Nani & Safitri, 2021). Transformational leadership has been identified as a precursor for innovation performance (Alblooshi *et al.*, 2021; Bass & Riggio, 2006; Cortes & Herrmann, 2020). Transformational leadership (TL) is the ability of a leader to raise employees' motivation through a vision and to persuade them to focus on organisational goal attainment (Avolio, 2004; Bass & Avolio, 1994). Transformational leaders stimulate employees' intellectual ability, encourage openness and communication, and inspire and motivate employee innovativeness in the organisation (Li *et al.*, 2012).

Emerging and developing markets face resource constraints that have compelled enterprises to reassess their innovation strategies. As such, organisations are looking at their internal context to improve their innovation success. Work engagement (WE) is a key contextual employee resource for positive organisational behaviour (Kwon & Kim, 2020) and a critical resource for innovation performance (Peng & Chen, 2023; van Zyl *et al.*, 2021). Work engagement fosters the firm's innovation performance by increasing employees' creativity levels when they are absorbed in work activities. Gameda and Lee (2020) and Lei *et al.* (2020) argue that WE is not only a precursor to organisational innovation, but it also intervenes in the relationship between TL and innovation. WE aligns employees with organisational goals, and they go beyond expectations (Bakker, 2017; Schaufeli, 2013). WE enables employees to become infused with a sense of purpose, enthusiasm, and energy (Osborne & Hammoud, 2017).

TL and WE are considered precursors of innovation performance; however, empirical research on how WE mediates the relationship between TL and innovation performance is limited. Even so, the indirect effect of WE on the relationship between TL and IP remains unclear. This study aimed to bridge the theoretical gap and extend our understanding of how WE indirectly affects the relationship between TL and IP.

1.1 Statement of the Problem

Innovation performance is crucial to enhancing SME competitiveness. (Yikilmaz & Cekmecelioglu, 2023). Manufacturing SMEs' ability to innovate is essential to their continued existence (Issau *et al.*, 2021). In 2024, Uganda ranked 121st out of 133 countries, and in 2023, it ranked 121st out of 132 countries, indicating a decline in innovation performance along with a decline in innovation inputs and outputs, World Intellectual Property Organization (WIPO) (2024). Additionally, the majority of SMEs fail to survive past their fifth year of operation, according to the 2015 Global Entrepreneurship Monitor Report (Bosma *et al.*, 2015), and Ugandan SMEs continue to exhibit low levels of innovativeness (Dawa *et al.*, 2025; Nduhura *et al.*, 2022).

Manufacturing SMEs are operating below capacity due to declining sales driven by low demand for locally manufactured goods (Sserunjogi *et al.*, 2021), as well as the existing STIs' insufficient capabilities and an inadequate national innovation system across all firms (Mulumba *et al.*, 2023; NPA, 2020). Despite the importance of IP to the growth, survival, and sustainability of SMEs, studies on IP regarding leadership in Ugandan SMEs are scarce. Little attention is given to research on IP in manufacturing SMEs in Uganda. Existing studies have looked at innovation in terms of inputs (Ahimbisibwe *et al.*, 2024; Kagere *et al.*, 2025; Mugisha & Ijjo, 2022) and process (Bakashaba *et al.*, 2024; Mulumba *et al.*, 2023), and there is a lack of research on innovation as both an input and output, thus necessitating investigating innovation performance from the organisational context in manufacturing SMEs.

1.2 Research Objectives

- i. To examine the effect of transformational leadership on innovation performance.
- ii. To assess the effect of work engagement on innovation performance.
- iii. To establish the effect of transformational leadership on work engagement.
- iv. To examine the mediating effect of work engagement on the relationship between transformational leadership and innovation performance.

1.3 Hypotheses

H₀₁: Transformational Leadership is not positively related to innovation performance.

H₀₂: Work engagement is not positively related to innovation performance.

H₀₃: Transformational leadership is not positively related to work engagement.

H₀₄: Work engagement does not mediate the effects of transformational leadership on innovation performance.

II. LITERATURE REVIEW

2.1 Theoretical Review

Upper Echelons Theory and Social Exchange Theory underpin this study. The Upper Echelons Theory (Hambrick & Mason, 1984) emphasizes how leadership influences interpretations that impact the company's strategy, including decisions related to innovation. The two fundamental tenets of UET are that top management bases its decisions on interpretations of the external environment, and that these interpretations are shaped by the manager's individual beliefs, personalities, experiences, and behaviours (Hambrick, 2007). The Upper Echelons Theory explains that the leadership of these enterprises can enable or constrain SME innovation performance. Leaders' decisions contribute to innovation in SMEs (Hoang *et al.*, 2021). Transformational leaders foster leader-follower value congruence, spark enthusiasm for work, convey a compelling group vision, and cultivate effective relationships with their subordinates (Monje-Amor *et al.*, 2020; Van Tuin *et al.*, 2021). Based explicitly on the UET, it is reasonable to deduce that innovation performance levels in SMEs are directly related to the TL behaviour of owners or managers.

The Social Exchange Theory posits that employer-employee relationships are shaped through a series of interactions characterized by reciprocity norms (Blau, 1964). The norms of reciprocity argue that one party's actions elicit reactions/responses from the other party. Reciprocity norms establish that one party's actions result in actions or responses by the other party. As both parties work towards mutual gains, the social exchange is balanced (Cropanzano & Mitchell, 2005). Based on SET, this study deduces that when the transformational owners/ managers of SMEs can make employees aware of the meaning of tasks they undertake, focus on the individual needs of subordinates, they establish a mutual trust atmosphere where employees get committed, intrinsically motivated to do their work, resulting in creative and innovative outcomes.

2.2 Empirical Review

2.2.1 Transformational Leadership and Innovation Performance

Research has shown that TL affects organisational outcomes, including organisational performance (Hilton *et al.*, 2023) and organisational innovation (Mokhber *et al.*, 2018). Bass (1990) identifies TL in terms of idealized influence (II), intellectual stimulation (IS), inspirational motivation (IM), and individualized consideration (IC). II is the leader's ability to provide a vision, instill pride, and gain respect and trust from the subordinates. IS refers to the leader's ability to promote intelligence, rationality, and attentive problem-solving (Le *et al.*, 2025). Inspirational motivation involves the leader communicating expectations, using symbols to focus efforts (Le *et al.*, 2025), and serving as a role model to subordinates (Gui *et al.*, 2024). Individual consideration involves the leader providing personal attention to followers through coaching and advising, treating each employee as an individual rather than as a group. Many scholars have continued to show interest in TL, and as such, examining the relationship between TL and innovation performance will broaden our understanding of the leadership-innovation management debate (Gui *et al.*, 2024).

Innovation performance drives economic development, playing a crucial role at the international, national, and firm levels (Azeem *et al.*, 2021; Surya *et al.*, 2021). Le and Lei (2019), Molina-Morales *et al.* (2014), and Yang *et al.* (2020) defined innovation performance: "Innovation performance is the product of several management techniques employed in organizations' business operations to produce or improve products, processes, marketing, and management". Innovation performance is classified into "product innovation performance, process innovation performance" (Prajogo & Sohal, 2006; Zheng, 2024), "market innovation performance," and "organisational innovation performance" (OECD, 2005; Kankisingi & Dhliwayo, 2022; Soto-Acosta *et al.*, 2017). Product innovation performance reflects the newness and meaningfulness of products introduced to the market, leading to increased sales, higher research and development expenditures, higher cash flow, and higher profits. Process innovation performance refers to changes in the firm's production methods, focusing on the speed, novelty, flexibility, and adaptability of these processes. Market innovation performance refers to how market research, new market entry, new market exploitation, advertising, and promotion contribute to market development, customer loyalty, and the attractiveness of the products offered. Finally, organisational innovation performance is the alignment of employees' strategies, skills, and commitment, as well as the integration of research and development into innovation goals.

There is scholarly work on the influence of TL on innovation performance (Gui *et al.*, 2024). According to Tajasom *et al.* (2015) and Nguyen *et al.* (2023), TL positively affects innovation performance. Literature has highlighted that the key behaviours of transformational leaders directly or indirectly affect innovation performance. Specifically, with TLs' idealised influence, it is easy to motivate and persuade employees to implement organisational changes and be innovative (Le & Lei, 2019). Employees can support and be involved in innovation efforts led by their transformational leaders, as collective interests are prioritized (Prasad & Junni, 2016). Through inspirational motivation, transformational leaders motivate employees to fulfil their duties and achieve organizational goals and objectives (Bass, 1990; Gemeda & Lee, 2020; Prasad & Junni, 2016). Thus, by emphasizing innovation performance, transformational leaders motivate employees to be more creative and innovative, thereby developing new ideas and providing solutions

to improve product, process, marketing, and organizational innovation performance (Le & Lei, 2019). Through intellectual stimulation, transformational leaders encourage employees to think outside the box (Cui *et al.*, 2022), enabling them to focus on the organisational vision, commit to achieving it, and work towards making it a reality (Hoai *et al.*, 2022).

Therefore, TL can inspire employees to innovate and improve current products, processes, markets, and organisational systems to meet the organisational goals and vision (Le & Lei, 2019; Gui *et al.*, 2024). With individualised consideration, transformational leaders can develop employees' competencies by offering them opportunities to learn, thereby fostering their innovative thinking (Novitasari *et al.*, 2021; Prasad & Junni, 2016). Moreover, by attending to each employee's individual needs, TL cultivates a supportive climate for innovation, allowing employees to experiment and fail without fear (Ting *et al.*, 2021). Based on the foregoing discussion, the following hypothesis is proposed.

2.2.2 Work Engagement and Innovation Performance

Several studies have demonstrated a relationship between WE and innovation (Rao & Weintraub, 2013). Specifically, Wang & Chen (2020) argued that innovation performance depends on employees' WE, which involves investing their emotional, cognitive, and social resources in their work, resulting in creative and innovative outcomes. According to Bakker and Xanthopoulou (2013), when employees are engaged in the workplace, they are more likely to engage in innovative activities that convert ideas into outputs. Kyoung Park *et al.* (2013) argue that WE effectiveness enables employees to experience positive emotions, which encourages them to be more open to creativity. This, in turn, strengthens their ability to innovate, leading to improved innovation performance through psychological work connection and commitment to high-performance standards (Ariyani & Hidayati, 2018).

Based on the work of Ghani *et al.* (2023), WE have a significant influence on innovation performance, as employees contribute fresh, original ideas and execute them to create innovative outcomes when engaged. With WE, employees can think outside the box and collaborate to innovate at both the individual and organisational levels (Vladić *et al.*, 2021). Using data from Palumbo (2021) on European healthcare organisations, it was found that WE trigger innovation-oriented behaviours at work, thereby increasing employees' willingness to improve organisational processes and practices, potentially resulting in enhanced innovation performance. Arshi and Rao's (2019) results from SEM analysis of 400 firms in Oman showed that WE significantly predicts innovation. Hence, the third hypothesis is as follows:

2.2.3 Transformational Leadership and Work Engagement

Research has considered WE a "positive, fulfilling, work-related state of mind characterized by absorption, dedication, and vigour" (Schaufeli & Bakker, 2004). In which absorption is "the ability to concentrate and be fully engrossed in one's work, whereby time passes intangibly" (Schaufeli & Bakker, 2004). Dedication is "a sense of significance, enthusiasm, inspiration, pride, and challenge" (Schaufeli & Bakker, 2010, 2004). Vigour refers to "high energy levels and mental resilience while working, indicating a willingness even in the face of difficulties" (Schaufeli & Bakker, 2004). WE enables employees to be psychologically, emotionally, and physically invested in their work, thereby binding together employees' effort, commitment, and satisfaction (Huang *et al.*, 2022). These engaged employees are motivated to achieve the firm's goals (Goyal *et al.*, 2024).

Leadership behaviours have considerable influence on enhancing employees' WE (Mazzetti *et al.*, 2023). Earlier research has shown a positive correlation between TL and work engagement, demonstrating that transformational leaders enhance employees' engagement by attaching meaning to their work (Lai *et al.*, 2020), offering social support (Wang *et al.*, 2023), and providing adequate resources. In the same vein, TLs create a supportive work environment where employees are empowered and have autonomy in their work execution (Chua & Oluremi, 2019).

Regarding the TL relationship with key elements of WE, some scholars have indicated that TL behaviours are associated with absorption, dedication, and vigour (Lai *et al.*, 2020). They argued that TLs create a supportive environment and offer helpful, easily accessible resources, motivating employees to invest their energy in their tasks with absorption, vigour, and dedication. In recent studies, Nguyen *et al.* (2022) and Zhang *et al.* (2025) argued that TL is significantly associated with work engagement amongst Chinese Intensive Care Unit nurses. Their findings revealed that TL practices have a significant impact on subordinates' attitudes and relationships with colleagues, thereby increasing their engagement and dedication to their work (Gumusluoğlu & Ilsev, 2009). Based on the above discussion, this study proposes a positive relationship between TL and WE.

2.2.4 Mediating Role of Work Engagement

According to social exchange theory, reciprocity norms enhance WE and can produce positive organisational outcomes (Agarwal, 2014; Yin, 2018). Based on SET, WE plays a mediating role in the relationship between organisational resources and organisational outcomes (Cropanzano *et al.*, 2017; Knight *et al.*, 2017; Simbula *et al.*,

2023). The leaders' transformational behaviour indicates an organisational resource towards WE (Breevaart & Bakker, 2018; Schmitt *et al.*, 2016). The behaviour of transformational leaders — idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration — encourages followers to leverage their strengths and take personal initiative, thereby enhancing their WE (Bakker, 2022).

These engaged employees are motivated to achieve the firm's goals (Goyal *et al.*, 2024). Relatedly, current literature supports the mediating role of WE in the relationship between leadership and innovation (Gui *et al.*, 2024). For example, Ntseke *et al.* (2022) argued that leaders who articulate the organisation's vision, stimulate creativity, act as role models, develop followers, and are inspiring would enhance employees' dedication, work effort, and energy levels. Kassa and Tsigu (2022) highlighted that securing WE helps organisations because behaviours demonstrated by engaged employees lead to positive outcomes in customer satisfaction, operational efficiency, and revenue growth. Lai *et al.* (2020) emphasised that the significant influence of TL behaviours on WE could enhance an organisation's innovation performance.

Recent research by Gameda and Lee (2020) reported that transformational leaders provide favorable conditions for WE to thrive, which, in turn, enhances the firm's ability to produce innovative outcomes (Barkat *et al.*, 2024; Zheng, 2024). Jiatong *et al.* (2022) examined WE as a mediating construct in the connection between TL and job performance. Bakker *et al.* (2023) found that WE serves as a mediating factor in the relationship between TL and follower performance. In line with the above discussion, the researcher proposes the following hypotheses.

III. METHODOLOGY

3.1 Research Design

A quantitative explanatory research design using cross-sectional data was employed. The design provides a causal relationship among variables based on individual experiences at a given time point. Yamane's formula was used to draw a sample of 326 SMEs, representing 958 manufacturing firms, employing a multistage sampling approach. The small and medium enterprises were divided into proportionate strata to enable the enterprise selection. The researcher then used random numbers in Excel to generate a list of firms to sample, based on the list provided by the Uganda Manufacturers' Association (2024). The respondents who completed the survey were either the firm's owners or managers, considered knowledgeable and playing a key role in guiding the SMEs' strategic direction.

The research team physically contacted the sample firms through personal visits to deliver the structured questionnaire to the owners and managers. The focus on owner-managers of manufacturing firms as study respondents stems from their knowledge of SME operations and their crucial role in shaping SME strategy. Observed variables were used in this study, drawn from existing developed scales, to develop measures for the three latent factors. An expert review was conducted prior to formal data collection, involving four academic scholars and two industry experts who possessed a deep understanding of this research field.

Additionally, a pilot test was performed with 40 SMEs to fine-tune the survey items and validate the research instrument in this context. For the main study, 326 questionnaires were distributed to the respondents, and 308 responses were collected. From the received responses, 305 were considered usable for data analysis. The data analysed in this paper were collected from small and medium enterprises. We focused on manufacturing SMEs, as they are important for job creation/employment, revenue generation, and represent growth potential for Uganda. The researcher used SPSS 27 to run hierarchical regression analysis and PROCESS Macro 4.2 to analyse the data.

3.2 Variable Measurement

Transformational Leadership. To measure TL, the owner-managers' perceptions of their leadership behaviour were assessed using the Multifactor Leadership Questionnaire (MLQ)-5X, developed by Avolio and Bass (2004), comprising 20 items. A sample item is "The firm's management talks enthusiastically about what needs to be accomplished," ranging from 1 (to a very slight extent) to 7 (to an extreme extent).

WE. The 17-item scale by Schaufeli and Bakker (2010) and Barrick *et al.* (2015) was adapted to measure employees' WE at the organisational level. A sample item, "In this firm, my co-workers and I tend to be highly focused when doing our job," was assessed using a 7-point Likert-type scale, ranging from 1 (Never) to 7 (Always).

Innovation Performance. Innovation performance, as defined by the OECD (2005), used by Abdulai (2019), Kankisingi & Dhliwayo (2022), and Soto-Acosta *et al.* (2017), was measured in this study using 22 items that represent four dimensions. Owner-managers were asked to assess the extent to which their SMEs had recently utilized the gains from their innovations on a seven-point Likert scale, ranging from 1 (Very strongly disagree) to 7 (Very strongly agree). The illustrative item is "In the last three years, new products have resulted in increased sales".

Control Variables. Firm Characteristics, including firm age and firm size, were controlled for to account for firm differences that may impact innovation performance (Le & Lei, 2019). This aligns with prior research (e.g., Birasnav *et al.*, 2013; Kireyeva *et al.*, 2021). The number of full-time employees is a measure of firm size. The years

since the firm's founding (Nadkarni & Hermann, 2010) represented the firm's age. Incorporating control variables ensured that these factors did not confound the observed relationships.

IV. FINDINGS & DISCUSSION

4.1 Preliminary Analyses

An exploratory factor analysis was conducted to determine whether the items converged into distinct factors. The reliability analysis revealed internal consistency, with Cronbach's alpha coefficients exceeding 0.70: IP = 0.848, TL = 0.837, and WE = 0.855. Validity was ascertained through convergent validity and discriminant validity. The average variance extracted (AVE), which measures convergent validity, was above 0.5 (Field, 2009; Hair *et al.*, 2019), with IP at 0.637, TL at 0.651, and WE at 0.596. The Fornell-Larcker criterion (Fornell & Larcker, 1981) was used to establish discriminant validity, with the square roots of the AVEs (IP-0.798, TL-0.807, and WE-0.772) exceeding the correlations among the variables, as shown in Table 2.

A common-methods bias (CMB) analysis was conducted to determine whether the data were inflated or deflated by respondents. This arises from collecting data from the same respondents, which can create bias (Podsakoff *et al.*, 2024). Harman's single-factor test, as recommended by Fuller *et al.* (2016), was done. The results indicated that the single factor accounted for 19.049%, which was below the maximum threshold of 50%, indicating that the CMB was non-existent.

Several regression diagnostics were performed to minimize erroneous results and enhance model robustness (Hair *et al.*, 2020). Variance inflation factors (VIFs) were checked to assess multicollinearity. The VIF results for all study models were below 5 (Hair *et al.*, 2019), with VIFs of TL = 1.050 and WE = 1.638. Therefore, multicollinearity did not affect our study.

4.2 Demographic Characteristics

The demographic characteristics of the participating sample are summarized in Table 1. The sample consisted of 161 participants (52.8%) who were male and 144 participants (47.2%) who were female. Of these, 38 (12.5%) were 30 years old or younger, 154 (50.5%) were between 30 and 40 years old, 93 (30.5%) were between 41 and 50 years old, and 20 (6.6%) were 51 years or older. Regarding participants' education, higher literacy levels were reported: 178 (58.4%) held a bachelor's degree, 76 (24.9%) held a postgraduate degree, and only 51 (16.7%) held a diploma. This demonstrates that owners and managers of manufacturing SMEs in Uganda possess high literacy levels. One hundred fifty-three participants (50.2%) had worked in the SMEs for 3-5 years, 57 (18.7%) had worked for 6-8 years, and 51 (16.7%) had worked for than 8 years. The classification defines small businesses as those with 5 to 49 permanent employees, and medium-sized businesses as those with 50 to 100 permanent employees. Statistics reported that 89 (29.2%) of the included firms were small, and 216 (70.8%) were medium, which aligns with the UMA business classification. Ninety-nine firms (30.2%) had existed for six or fewer years, and 213 firms (69.8%) had existed for more than 6 years.

Table 1*Demographic profile of respondents and the Enterprises*

Profile of Respondents			
Variable	Factor	Frequency	Percent
Gender	Male	161	52.8
	Female	144	47.2
Age	<30 years	38	12.5
	30 – 40 years	154	50.5
	41 – 50 years	93	30.5
	51 years & over	20	6.6
Education Level	Diploma	51	16.7
	Degree	178	58.4
	Masters	69	22.6
	PhD	7	2.3
Years in Enterprise	<3 years	44	14.4
	3 – 5 years	153	50.2
	6 – 8 years	57	18.7
	Above 8 years	51	16.7
Position	Top Management	226	74.1
	Business Owner	79	25.9
Profile of Enterprises			
Firm Age	1 – 3 years	11	3.6
	4 – 6 years	81	26.6
	7 – 9 years	58	19
	10 years and above	155	50.8
Firm Size	5 – 49 employees	89	29.2
	50 - 100 employees	216	70.8
Total		305	100

4.3 Descriptive Statistics

This study was set to identify and document TL, WE, and innovation performance from a developing country perspective. To summarize the data, means and standard deviations were used. TL (Mean=4.659, SD=0.786), WE (Mean=4.831, SD=0.798), and innovation performance (Mean=4.617, SD=0.732). These results indicate low variation relative to the mean, suggesting that the calculated means are highly representative of the data used (Field, 2009).

Table 2*Results for Mean, Standard Deviations, and Correlation Coefficients*

Variable	Mean	SD	IP	TL	WE
IP	4.617	0.732	1		
TL	4.659	0.786	.535**	1	
WE	4.831	0.798	.485**	.561**	1

Note: N=305, **. Correlation is significant at the 0.01 level (2-tailed)

4.4 Hypotheses Testing

The first study hypothesis predicted a positive relationship between TL and innovation performance. A hierarchical multiple regression was run. Results in Table 3, Model 1, control variables were entered as the independent variable, and innovation performance as the dependent variable. Firm age ($\beta = 0.071, p < .001$) was found to be positively related to innovation performance. These results align with those of Birasnav *et al.* (2013); our findings confirm that as manufacturing SMEs age, their involvement in innovative activities increases. As reflected in Table 3, in Model 2, we controlled for the covariates and entered the independent TL. The findings show a statistically significant relationship between TL and innovation performance [$F(1, 301) = 109.089, p < 0.001$], with the model explaining 24.7% of the variance in innovation performance. The standardized Beta ($\beta = 0.504$) further supports a moderate positive effect of TL on IP. This shows that the first null hypothesis (H01) was rejected.

We hypothesized that WE does not have a positive relationship with innovation performance (H02). As indicated in Model 3 of Table 3, WE is positively ($\beta = 0.247$) and significantly related to innovation performance [$F(1,300) = 19.229, p < 0.001$]. The model explained 4.1% variance in innovation performance. This implies that hypothesis two was not supported. A new hierarchical model was run to test the third hypothesis (H03) presented in Table 4. The results



indicate that TL has a positive and significant effect on WE ($\beta = 0.543, p < .001$). Further, the results show that for every 1-unit change in TL, there is a 0.528-unit change in WE.

Table 3
Hierarchical Regression Results for H1 and H2

Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Change Statistics				
					R-squared Change	F Change	df1	df2	Sig F Change
1	0.267	0.071	0.065	0.89375	0.071	11.565	2	302	.000
2	0.564	0.318	0.311	0.76698	0.247	109.089	1	301	.000
3	0.599	0.359	0.351	0.74476	0.041	19.229	1	300	.000
Coefficients									
Model		B	Std Error	β	t	Sig.			
1	Constant	3.647	0.216		16.887	0.000			
	Firm age	0.243	0.005	0.248	4.407	0.000			
	Firm size	0.121	0.105	0.065	1.154	0.250			
2	Constant	1.632	0.268		6.099	0.000			
	Firm age	0.163	0.048	0.167	3.41	0.000			
	Firm size	0.093	0.09	0.050	1.029	0.304			
	TL	0.509	0.049	0.504	10.445	0.000			
3	Constant	1.099	0.287		3.833	0.000			
	Firm age	0.136	0.047	0.139	2.895	0.004			
	Firm size	0.097	0.088	0.052	1.107	0.269			
	TL	0.374	0.057	0.370	6.617	0.000			
	WE	0.256	0.058	0.247	4.385	0.000			

a Dependent Variable: Innovation Performance
Predictors: TL-Transformational leadership, WE-Work engagement

Table 4
Hierarchical Regression Results for H3

Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Change Statistics				
					R Square change	F Change	df1	df2	Sig F Change
1	0.202	0.041	0.035	0.87529	0.041	6.434	2	302	0.002
2	0.572	0.327	0.32	0.7345	0.286	127.87	1	301	0.000
Coefficients									
Model		B	Std Error	β	t	Sig.			
1	Constant	4.167	0.212		19.702	0			
	Firm age	0.189	0.054	0.201	3.512	0			
	Firm size	0.013	0.103	0.007	0.129	0.897			
2	Constant	2.078	0.256		8.108	0			
	Firm age	0.107	0.046	0.113	2.334	0.02			
	Firm size	-0.016	0.086	-0.009	0.187	0.852			
	TL	0.528	0.047	0.543	11.308	0			

a Dependent Variable: Work Engagement,
Predictor: Transformational leadership

In the fourth hypothesis, WE was not expected to mediate the relationship between transformational leadership and innovation performance. We employed the mediation procedures suggested by MacKinnon (2012). The four mediation requirements include that the independent variable (TL) must have a significant effect on the dependent variable (innovation performance), the mediator variable (WE) must have a significant effect on the dependent variable (innovation performance), the independent variable (TL) must have a significant effect on the mediator (WE), and lastly, a significant coefficient for the indirect path must be found from the independent variable to the dependent variable. Preacher and Hayes' Bootstrapping method was used to verify the magnitude and test the statistical significance of the indirect effect (Preacher & Hayes, 2004). Table 5 presents the statistical evidence supporting the requirements for the mediation model. According to this table, a positive and significant relationship exists between TL and WE ($\beta = 0.528, p < .001$), which satisfies the first requirement for the mediation model. Furthermore, a positive and significant



relationship exists between WE and innovation performance ($\beta = 0.256, p < .001$), which satisfies the second condition for mediation. Additionally, a positive and significant relationship exists between TL and innovation performance ($\beta = 0.509, p < .001$), satisfying the requirements for the third condition. The last requirement was also satisfied as shown in Table 6, as the bootstrap results suggest a significant indirect effect ($a1*b1$) ($\beta = 0.135, p < .001$). These results indicate that WE partially mediates the link between TL and WE, as the indirect effect remained significant with the introduction of the mediator ($\beta = 0.374, p < .001$). Therefore, H_04 was rejected.

Table 5
Mediation Analysis: Work Engagement as a Mediator

Model Summary	R	R Square	MSE	F	df1	df2	p
	.572	.327	.539	48.715	3	301	p<.001
Model	Coeff	SE	t	p	LLCI	ULCI	
Constant	2.078	.256	8.108	p<.001	1.573	2.582	
TL	.528	.047	11.308	p<.001	.436	.620	
Firm age	.107	.046	2.334	p=0.02	.017	.197	
Firm size	-.016	.086	-.187	p=0.852	-.186	.154	
Outcome variable: Work engagement							
Model Summary	R	R Square	MSE	F	df1	df2	p
	.599	.359	.555	42.059	4	300	p<.001
Model	Coeff	SE	t	p	LLCI	ULCI	
Constant	1.099	.287	3.833	p<.001	.535	1.664	
TL	.374	.057	6.617	p<.001	.263	.485	
WE	.256	.058	4.385	p<.001	.141	.371	
Firm age	.136	.047	2.895	p=0.004	.044	.228	
Firm size	.097	.088	1.107	p=0.269	-.075	.269	
Outcome variable: Innovation performance							
Model Summary	R	R Square	MSE	F	df1	df2	p
	.564	.318	.588	46.833	3	301	p<.001
Model	Coeff	SE	t	p	LLCI	ULCI	
Constant	1.632	.268	6.099	p<.001	1.105	2.158	
TL	.509	.049	10.445	p<.001	.413	.605	
Firm age	.163	.048	3.41	p=0.01	.069	.257	
Firm size	.093	.090	1.029	p=.304	-.085	.270	

Outcome variable: Innovation performance

Note: N=305; LLCI=Lower Limit Confidence Interval, ULCI=Upper Limit Confidence Interval

Table 6
Mediation Analysis Summary

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		t-statistics	Conclusion
				Lower Bound	Upper Bound		
Transformational leadership→ Work engagement→ Innovation performance	0.509	0.374	0.135	0.073	0.206	10.445	Partial Mediation
	(0.000)	0.000					

4.5 Discussion

The study was purposed to understand the precursors of innovation performance by focusing on TL and work engagement. Hypothesis one anticipated a positive effect of TL on innovation performance. The collected data from manufacturing SMEs confirmed that TL is needed for improved innovation performance. These findings align with Tajasom *et al.*'s (2015) study, which found that the TL behaviours of owner-managers can effectively enhance innovation performance within SMEs. In a similar vein, Hoai *et al.* (2022) and Novitasari *et al.* (2021) recognised TL as pivotal to fostering innovation performance within an organisation. This study not only broadens the field of leadership and innovation performance but also incorporates WE within the same framework, thereby making a valuable

contribution to research on WE as an antecedent of innovation performance. Findings in hypothesis two confirm a positive and significant relationship between WE and innovation performance. This corroborates with Vladić *et al.* (2021), who found that engaged employees can think outside the box and collaborate to innovate at both the individual and organisational levels.

The current study extends the Upper Echelons Theory. Earlier research has overly focused on the manager demographics, paying less attention to the behavioral aspects. Nevertheless, compared to demographic characteristics, leadership behaviour may reflect the owners' and managers' beliefs that shape the strategy of SMEs (innovation performance). Based on the upper echelons theory, results specify that TL behavioral aspects (Bosma *et al.*, 2016) are imperative in influencing innovation performance as an organisational outcome. Based on Social Exchange Theory, this study established the indirect effect of WE on TL and innovation performance. Results show that the mediation hypothesis is supported, indicating that vigour, dedication, and absorption among SME employees are crucial for transformational owner-managers to promote innovation performance. This aligns with Barkat *et al.* (2024), who found that TL leads to increased employee engagement, thereby improving innovation outcomes.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study, therefore, underscores the empirical literature on innovation performance in Uganda, a developing country. This study concludes that TL and WE have significant potential in enhancing the innovation performance of manufacturing SMEs in GKMA, Uganda. Specifically, it concludes that TL is a better contextual factor explaining 24.7% of the variance in innovation performance. The findings complement the Upper Echelon Theory (UET), which assumes that TMT's characteristics, values, and dispositions influence organisational-level outcomes (Hambrick & Mason, 1984). Based on the upper echelons theory, our results suggest that the behaviours exhibited by transformational owner-managers of SMEs provide a vision for the innovation strategies to be adopted, leading to better innovation performance. The results also complement the Social Exchange Theory (SET) by highlighting the importance of social exchanges that foster positive, reciprocal relationships among leaders and employees in organisations. The findings imply that TL and WE offer an avenue for manufacturing SMEs to improve their financial viability through increased profits and revenues from innovation successes. Therefore, this would enable manufacturing SMEs to support the Sustainable Development Goals, the African Union Agenda 2030, and Uganda's NDP IV by reducing unemployment, improving innovation, and reducing income inequality. However, the modest explanatory power of TL and WE suggests that additional factors and targeted interventions are needed to improve the innovation performance of manufacturing SMEs.

5.2 Recommendations

This paper calls for targeted recommendations to improve innovation performance among manufacturing SMEs in Uganda. To the owners or managers, they need to ensure that there is individualized consideration for employees, have inspirational motivation and idealized influence, which orients employees toward the organization's vision. Owners and managers of manufacturing SMEs should undertake TL training, enabling them to lead with a clear vision and ensure WE, ultimately improving innovation performance within SMEs.

In addition, owners/ managers foster positive relations and collaboration among their SME employees. With such an environment, the SMEs' innovation strategies will be supported. Notably, increasing awareness among SME owners and managers of the numerous benefits of adopting TL may motivate them to move away from bureaucratic leadership tendencies. This shift could involve being individually considerate of employees, amplifying SMEs' visions, and modelling the required behaviour within SMEs, thereby engaging employees in SME work and improving innovation performance.

Results revealed a mediating role of WE in supporting leadership and organizational outcomes. Therefore, it is paramount for organisations to establish a conducive work atmosphere that upholds employees' WE. Specifically, owners/managers of SMEs can contribute to a supportive work environment by supporting employees, giving them autonomy, and providing positive feedback, which enhances rapport within the organisation and increases trust, thereby increasing WE. By aligning the owners/managers' leadership behaviour with the organisation's innovation goals, SMEs can not only have an engaged, vibrant, and dedicated workforce but also cultivate an innovation culture. Finally, the study findings align with these recommendations, highlighting that omitting TL and WE can hinder companies seeking to attain excellence in innovation performance. This research provides actionable insights that can empower SMEs to leverage TL effectively in their pursuit of innovation performance.

Data were obtained from manufacturing SMEs in GKMA, Uganda, which increases the probability of transferability to other countries. Future research may aim to extend the same study using different settings and samples. This study is further restricted to a single source. No archival data were used in the study, as all SMEs are privately owned. Future studies should utilize multiple sources and archival data to enhance the validity and accuracy of their findings.

This study also used cross-sectional data, which limits understanding of innovation performance over time. Future researchers should use longitudinal studies to get insights into the dynamics of IP over time. In addition, this study employed cross-sectional empirical findings, which can be regarded as revealing correlations. Future research could employ a longitudinal study to capture changes in TL and WE and examine how these factors improve the innovation performance of manufacturing SMEs, thereby providing more robust evidence.

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