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From the Editorial Committee

We are giving you the next Vol. 30, No. 1(2025) issue of the Quarterly of the Faculty of Management of the Rzeszow University of Technology entitled "Modern Management Review".

The primary objective of the Quarterly is to promote publishing of the results of scientific research within economic and social issues in economics, law, finance, management, marketing, logistics, as well as politics, corporate history and social sciences.

Our aim is also to raise the merits and the international position of the Quarterly published by our Faculty. That is why we provided foreign Scientific Council, as well as an international team of Reviewers to increase the value of the scientific publications.

The works placed in this issue include many assumptions and decisions, theoretical solutions as well as research results, analyses, comparisons and reflections of the Authors.

We would like to thank all those who contributed to the issue of the Quarterly and we hope that you will enjoy reading this issue.

With compliments
Editorial Committee

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COMPETENCE DEVELOPMENT AND THE DRIVE TOWARDS LABOUR MARKET DEMAND FOR TERTIARY EDUCATION GRADUATES: IMPACT OF THE STUDENTS' INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

The Student Industrial Work Experience Scheme (SIWES) enhances students' competencies by bridging the gap between practice and theory to improve employability. Despite this, there is limited empirical evidence concerning the programme's effectiveness in supporting capability development among participating students in Nigeria. This study, therefore, investigates whether SIWES enhances the development of the most sought-after employability competencies among participating students. One hundred and thirty-four students were sampled, and data was analyzed using a structural equation model. The study confirmed that SIWES enhances four out of the five competencies examined. The study concluded that SIWES offers significant benefits to students by fostering the development of competencies such as analytical, adaptability, ICT proficiency, problem-solving abilities, and people management skills, all of which are crucial for future employment. The study recommended that higher education providers strengthen and establish frameworks for effective SIWES programme to develop students' competency and prepare them for future jobs.

Keywords: SIWES, competence development, health information management, structural equation model, higher education institution.

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1. INTRODUCTION

The acquisition and application of 21st-century skills, competencies, and capabilities have become significant factors in the global job market. Competency development involves educational training to improve knowledge, skills, and personal attributes to enhance workplace productivity and performance (UNIDO, 2017; World Economic Forum, 2017). The nature of modern production and industrial needs now require practical skills and intuitive knowledge to handle modern equipment and technologies effectively (Adegbite, Adeosun, 2021). The World Economic Forum (World Economic Forum, 2017) has identified the skills and competencies in demand for employability in 21st-century organisations. This has sparked a debate on the role of higher education providers in preparing a future workforce that is employable and equipped with the necessary skills and competence to meet the needs of individuals, organisations, and the economy. The acquisition and development of cognitive and socio-emotional skills among young graduates before entering the labour market will be crucial due to the unpredictable shifts in labour demands brought about by global market trends, especially the fourth industrial revolution.

Across the globe, it is widely recognized that training and development are pivotal for enhancing human capacity and driving socio-economic growth. The ability to secure and retain jobs is closely linked to the quality of educational training, which should align with the demands of the labour market. A mismatch between industry needs and workers' skills can lead to decreased employability, often due to insufficient training or education in technical and problem-solving skills (UNIDO, 2017). Hence, tertiary institutions must ensure that students are equipped with the technical and analytical skills necessary to add value to themselves and collaborate effectively with multinational teams and organisations. To address the evolving skill requirements, curriculum design should be flexible to bridge the gap between academic learning and industry needs, as skill mismatch experienced in the industrial sector results from global technological advancements. The Fourth Industrial Revolution (4IR) has spurred a growing demand for critical skills, particularly in the Information and Communications Technology sector, as Artificial Intelligence gradually replaces human labour.

In Nigeria, graduate unemployment has been a major challenge for the economy. Recent evidence indicates that the nation's socio-economic status has suffered due to a significant increase in unemployment. For example, according to the National Bureau of Statistics (NBS), the unemployment rate surged to an average of 13.5% in 2006 and escalated to 27.10% in the second quarter of 2020. Additionally, youth unemployment constituted 53.40% of the affected population (NBS, 2020). Scholars have identified various causes of unemployment in Nigeria, including the government's failure to create job opportunities through policies, investors' lack of a clear workforce development plan, economic recession, greater employment of expatriates, and the inadequacy of employable skills that align with industry needs (Dada, Ojetunde, 2020). There are also concerns about the quality of training graduates receive from Nigerian tertiary institutions. Business owners in both government and non-governmental enterprises have doubts about the competency of graduates from Nigerian institutions, believing that their qualifications do not necessarily guarantee employability. It has become evident that an applicant's demonstrated competence plays a crucial role in organisations' hiring decisions, even though the number of job openings cannot accommodate the influx of graduates from various tertiary education institutions in the country (Dada, Ojetunde, 2020). Many

organisations tend to favour applicants with foreign qualifications due to deficiencies in technical competency development among graduates of local tertiary institutions (Adegbite, Adeosun, 2023; Dada, Ojetunde, 2020).

In 1973, the government established the Students' Industrial Work Experience Scheme (SIWES) under the Industrial Training Fund (ITF) to provide students in tertiary institutions with practical industrial skills and experience. SIWES aims to prepare students for future employment by exposing them to modern technology and equipment unavailable in their institutions. Additionally, it serves as a way for students to apply their theoretical knowledge to practice. Reports have indicated that SIWES positively impacts students' academic performance (Anyeana, Ochuba, 2019). Despite this development, the future of the Nigerian labour market remains uncertain, as there are doubts about whether the scheme has achieved its objectives. There is a growing concern about the impact of the Student Industrial Work Experience Scheme (SIWES) on the development of skills and the employability of graduates.

The significance of the industrial work experience programme in equipping tertiary education graduates with vital skills and enhancing their employability in Nigeria's competitive job market has recently garnered considerable attention from both academic institutions and employers. However, uncertainty persists regarding whether the training these programmes provide leads to guaranteed employment. There are ongoing discussions about how the Student Industrial Work Experience Scheme (SIWES) fosters the development of crucial skills among students, particularly the 21st-century competencies that modern organizations demand. This research aims to investigate the specific ways in which industrial work experiences contribute to the enhancement of key employability competencies among tertiary education students in Nigeria. Specifically, it evaluates the impact of practical experiences gained through internships and industrial placements on the skills most valued by employers, including people management, complex problem-solving, information and communication technology (ICT), adaptability, and critical thinking, all of which are essential for students' overall career readiness upon graduation. This paper is structured into several key sections. The literature review delves into previous studies on student industrial work experience and related concepts. The third section offers background information and outlines the methodology employed in the research. Subsequently, the analysis and findings are presented, accompanied by discussions and their implications. The paper concludes with a summary of the key points, recommendations for future research, and a discussion of any limitations encountered.

2. CURRENT STUDIES

2.1. Student Industrial Work Experience Scheme (SIWES)

In 1973, Nigeria's Industrial Training Fund (ITF) introduced the Student Industrial Work Experience Scheme (SIWES), which equips students with practical skills essential for their future post-graduation careers. The program seeks to narrow the gap between theoretical knowledge obtained in tertiary institutions and the practical demands of industries. SIWES facilitates collaboration between academic institutions and industries, enabling undergraduate students in science, engineering, technology, and other professional courses to gain hands-on experience. According to Usman (2021), SIWES enhances students' practical skills alongside their theoretical understanding by exposing them to real-world work environments. The program provides students with invaluable experience in utilizing tools, machinery, and equipment not readily available within

educational settings (Oswald-Egg, Renold, 2021). As Abraham-Ibe (2015) stated, the Student Industrial Work Experience Scheme (SIWES) allows students to develop essential skills such as teamwork, problem-solving, communication, and time management while pursuing university academic studies.

2.2. Competency Development in Tertiary Education

Competency encompasses observable attributes such as knowledge and skills and underlying characteristics like attitudes, traits, and motives, all of which contribute to exceptional job performance (Pang et al., 2018). This concept extends beyond technical abilities and expertise for a specific role to include personal qualities and behaviours that enhance effectiveness in the workplace. Employers increasingly seek individuals who can take initiative, address challenges, and offer innovative solutions (Ahmed et al., 2022). Competency development in higher education is essential for preparing students to succeed in their careers (Varma & Malik, 2023). Tertiary institutions play a key role in fostering competency through coursework, practical training, and collaborative projects (Kenayathulla et al., 2019). This approach ensures that graduates are well-prepared for the challenges of the global marketplace. Tertiary institutions use various methods to develop students' competencies, such as academic coursework, internships, collaborative projects, and competency-based assessments (Fuchs, 2022). These experiences help students apply theoretical knowledge in real-world contexts and assess their readiness for the workforce.

3. HYPOTHESES DEVELOPMENT

3.1. SIWES, Analytical, and Critical Thinking Competence

An essential attribute of an educated individual is the capacity to solve personal and societal challenges using analytical and critical thinking skills. Cultivating analytical and critical thinking abilities is vital for undergraduate students, by enhancing their likelihood of securing employment after graduation. One effective approach for students to enhance these skills is through participation in the Student Industrial Work Experience Scheme, which is tailored to provide exposure to various problem-solving scenarios (Daerego, Victor, 2023). The escalating unemployment and underemployment among youths and graduates in Nigeria highlights the lack of essential analytical and critical skills needed to sustain the Nigerian economy in the twenty-first century (Alao et al., 2022). The current curricula of vocational and technology education programme in Nigerian tertiary institutions do not appear to align with the country's contemporary demands for workplace employment. Additionally, students graduating from higher institutions often do so without acquiring the necessary work-related skills and working experiences to adequately prepare them for the labor market (Fuchs, 2022). The SIWES introduces undergraduate students to opportunities for learning, improving, and sustaining their analytical and critical thinking skills, which can enhance their employability after completing their studies. Studies have shown that students improved their critical thinking and problem-solving skills after completing their industrial training (Rodzalan et al., 2020). This program helps students develop analytical and professional skills necessary for future job placements. Based on the above, the current study hypothesized that:

H1: Student Industrial Work Experience Scheme positively impacts students' analytical and critical thinking.

3.2. SIWES and Adaptability Competence

The importance of the Students Industrial Work Experience Scheme (SIWES) has been a major concern for education and economic planners in Nigeria, particularly regarding its impact on graduate employment and overall societal development. There are ongoing debates regarding its influence on students' academic performance and preparedness for the labour market, including their ability to adapt to changes and meet workplace demands. Daerego and Victor (2023) noted that the academic training provided by higher institutions in Nigeria is mainly theoretical and lacks practical elements. Consequently, graduates often lack the skills and competencies required in the job market. The significance of SIWES in preparing graduates for employment opportunities cannot be overstated. In essence, it plays a crucial role in closing the skill gaps between the job skills required and the current capabilities of the workforce in the labour market (Daerego, Victor, 2023). SIWES is designed to equip students with adaptability skills by exposing them to the flexibility needed to handle change, manage multiple demands, and adapt to new situations. Whether the above objective is achievable is one of the propositions that the current study put forward to investigate, thus hypothesized that:

H2: Student Industrial Work Experience Scheme positively impacts students' adaptability competence.

3.3. SIWES and ICT Competence

Information and communications technology (ICT) advancement has sparked a significant shift in academic curricula. Educational institutions are now prioritizing the integration of digital tools. In discussions about the future of work, students are constantly urged to adapt to the innovations of ICT, leading to changes in job requirements that demand specific digital skills and competencies (Usman, 2021). Implementing the SIWES programme in Nigerian higher institutions is a valuable innovation that can provide students with a competitive edge in ICT competence. This is increasingly crucial in today's technology-driven business landscape, as many organizations heavily rely on technology for their operations. The importance of ICT-based knowledge for students, particularly in developing ICT competence, cannot be overstated (Bashir et al., 2022). Based on the above, this study aimed to investigate the significance of SIWES on the development of ICT-related knowledge among tertiary education students in Nigeria, thus hypothesizing that:

H3: Student Industrial Work Experience Scheme positively impacts students' ICT competence.

3.4. SIWES and Complex Problem-Solving Competence

Problem-solving is an essential part of our daily activities, such as deciding what to wear, using new electronic devices, planning travel routes, organizing work schedules for efficiency, and communicating with people who speak different languages, among others (Wu, Molnar, 2022). The SIWES programme could serve as a good learning platform to offer students the opportunity to acquire this vital practical skill called complex problem-solving skills. Studies have pointed out a challenge of internships in Nigeria as the mismatch between training and labour market demands, emphasizing that educators must handle students' emotions, cognitive development, and values for effective learning (Maiunguwa, 2022). Eichmann et al. (2019) emphasized the importance of problem-solving skills for active social participation, which can be gained through programme like the SIWES. The current study, among others, was designed to investigate the connection

between the Students Industrial Work Experience Scheme (SIWES) and problem-solving skills among tertiary education students in Nigeria, building on previous research highlighting the importance of problem-solving skills for the employability of new entrants into the labour market. It is therefore hypothesized that:

H4: Student Industrial Work Experience Scheme positively impacts students' problem-solving competence.

3.5. SIWES and People Management Competence

Student employability in the labor market is closely linked to subjective assessment of their preparedness for securing employment (Omonijo et al., 2019). Employers place great importance on skills and knowledge, as they can significantly impact the production of goods and services and corporate goals. People management skills are among the sought-after competencies required by 21st-century organisations (World Economic Forum, 2017). Therefore, SIWES is expected to cultivate students' people management competence through leadership, communication, and teamwork skills, given their experience working alongside others. A comparative study by Omonijo et al. (2019) also examined student industrial work experience in the United States, Turkey, Germany, and Nigeria. The study revealed that although SIWES is vital for students to acquire essential competencies like people management skills, its failure to assess the scheme's impact on achieving specific competency attainment remains a significant limitation. It is on the premise of the above that this study hypothesized that:

H5: Student Industrial Work Experience Scheme positively impacts students' people management competence.

4. METHODS

4.1. Study Population and Sample

The study employed a non-experimental research design, focusing on second-year health and information management program students. The study population included participants in the SIWES programme, from which 134 second-year students were selected from the School of Health Information Management at Obafemi Awolowo University Teaching Hospital in southern Nigeria. Following the sample size determination technique proposed by Barclay et al. (1995), the study used the construct with the highest number of indicators, the SIWES construct with ten indicators, to determine the minimum sample size. Based on this technique, 100 cases are expected to be the minimum sample size for this study; thus, 134 respondents were deemed appropriate. SmartPLS software was utilized to perform structural equation modeling using a non-parametric approach to test the hypotheses.

4.2. Measurement of construct

This study used scales from previous research (Al-Alawneh, 2014; Suarta et al., 2017) to evaluate student industrial work experience (SIWES) and competencies. Data was collected through a structured questionnaire. The competency development scale comprised 28 items rated on a five-point Likert scale (1= Very low to 5=Very high), while the SIWES scale has 10 items rated on a five-point Likert scale, where 1 represents Never, and 5 represents Very often. The content validity index for these scales was 0.74 and 0.78, and the ordinal alpha reliability coefficient was 0.88 and 0.84, respectively.

Table 1. Demographics

Age		
	Frequency	Percentage (%)
Below 16 yrs	12	8.9
16-20 yrs	81	60.5
21-25 yrs	20	14.9
26-30 yrs	21	15.7
Total	134	100.0
Gender		
Female	97	72.4
Male	37	27.6
Total	134	100.0

Source: Author's work.

5. RESULTS

The study utilized SmartPLS software to assess the reliability and validity of the instrument and determined that it accurately measures its intended variables. Both Cronbach's Alpha and Composite Reliability for assessing the consistency of all constructs were found to be above 0.70.

5.1. Measurement (Outer Model)

The study used the partial least square method, a popular approach in global research (Hair et al., 2016; Koch, 2013). It involves two stages: the measurement model (outer model) and the structural model. All study variables were reflectively measured, and the outer model was evaluated for reliability and validity. The measurement model comprises endogenous and exogenous variables. Competency development (endogenous variable) encompasses five sub-constructs, namely analytical and critical thinking (Comp_ACT), adaptability (Comp_AD), information communication and technology (Comp_ICT), people management (Comp_PM), and problem-solving (Comp_PS). The student industrial work experience (SIWES) represents the exogenous variable.

5.2. Indicator Reliability and Consistency

The outer loading values from all constructs are used to determine the reliability of an indicator. An external loading of 0.50 is preferred (Hair et al., 2022), while values below 0.50 are considered unreliable and should be removed from the items. In this study, all constructs had outer loadings above 0.50. However, the loadings for SIWES8 were less than 0.50, so this indicator was considered unreliable and deleted to establish item reliability. Another important aspect of the assessment model is composite reliability, which evaluates the internal consistency of the constructs. Hair et al. (2017b) state that a model is reliable if the composite reliability is greater than 0.70. All items have a composite reliability coefficient greater than 0.70 (see Table 2), fulfilling the recommended threshold. In addition, each construct has a value ranging from 0.838 to 0.912. These values align with Hair et al.'s recommendation, indicating that the model is reliable for testing the hypotheses.

5.3. Validity (Discriminant and Convergent)

Convergent validity assesses how well a construct aligns with other measurements in a study. The recommended AVE value is 0.40 by Hair et al. (2017b) and 0.50 or higher by Chin (2010). In this study, all AVE are above 0.50 and, therefore, meet the cut-off with the recommended value. This study employed two different methods to assess the discriminant validity of the models. The Fornell-Lacker criterion was utilized to calculate the square root of the average variance extracted (AVE) for each variable. In this study, the Hetero Trait – Mono Trait (HTMT) correlation ratio is used to assess discriminant validity. A construct is discriminately valid if the HTMT value is below 0.90 (Henseler et al., 2016). Findings indicate that all HTMT values in this model are below 0.90, confirming that the model has discriminant validity.

Table 2. Reliability and Validity of Measurement

Construct	Items	Indicator Reliability	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Analytical & Critical Thinking	Comp_ACT 1	0.857	0.866		
	Comp_ACT 2	0.805			
	Comp_ACT 3	0.761		0.907	0.71
	Comp_ACT 4	0.819			
	Comp_ACT 5	0.768			
	Comp_ACT 6	0.761			
Adaptability	Comp_AD 1	0.808	0.886		
	Comp_AD 2	0.847		0.912	0.634
	Comp_AD 3	0.845			
	Comp_AD 4	0.869			
Problem-Solving	Comp_CPS 1	0.743	0.851		
	Comp_CPS 2	0.823			
	Comp_CPS 3	0.735		0.884	0.565
	Comp_CPS 4	0.759			
	Comp_CPS 5	0.746			
	Comp_CPS 6	0.775			
ICT	Comp_ICT 1	0.883	0.878		
	Comp_ICT 2	0.893			
	Comp_ICT 3	0.744		0.908	0.622
	Comp_ICT 4	0.651			
	Comp_ICT 5	0.61			
	Comp_ICT 6	0.681			
People Management	Comp_PM 1	0.831	0.862		
	Comp_PM 2	0.779			
	Comp_PM 3	0.819		0.894	0.584
	Comp_PM 4	0.82			
	Comp_PM 5	0.748			
	Comp_PM 6	0.728			

Table 2 (cont.). Reliability and Validity of Measurement

Construct	Items	Indicator Reliability	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
SIWES	SIWES 1	0.616	0.792	0.838	0.546
	SIWES 10	0.579			
	SIWES 2	0.505			
	SIWES 3	0.596			
	SIWES 4	0.542			
	SIWES 5	0.577			
	SIWES 6	0.588			
	SIWES 7	0.636			
	SIWES 8	0.442			
	SIWES 9	0.748			

Source: Author's work.

5.4. Structural (Inner Model)

Hair et al (2016) suggests using a structural inner model to test causal relationships between exogenous and endogenous variables is appropriate. In this study, the bootstrapping technique was used to examine the significance of the structural path. This study tested five hypotheses using the structural model, and the significance of the path coefficients was measured through accelerated bootstrapping confidence interval (Henseler et al., 2016). A total of 134 respondents and 5000 bootstrapping samples were utilized to test the hypotheses' level of significance. The findings include the parameters and statistics indicating the direct associations between the constructs (see Figure 1 and Table 3).
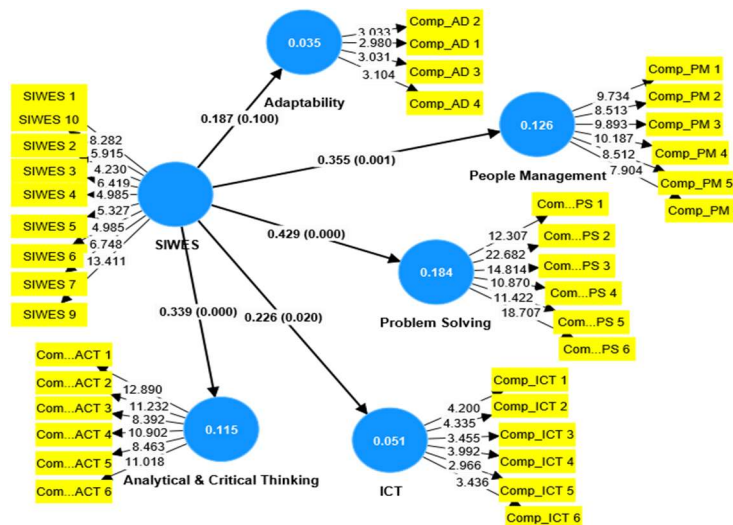

Figure 1. Graphical Representation of Hypothesis Testing

Source: Author's work.

Figure 1 shows the path coefficient and p-values ascertaining the relationship between the constructs. The analysis presented in Table 3 reveals no statistically significant positive direct relationship between student industrial work experience (SIWES) and the adaptability competency of Information and Health Management students. Specifically, the direct effect of SIWES on the adaptability competence of the students was measured at 0.187 (p= 0.100). Furthermore, given that the t-value (1.644) in the relationship was less than 1.96, hypothesis one (H1) was rejected.

Table 3: Path Coefficient and Relationships

Hypothesis	Relationship	Original Sample (0)	Sample Mean (M)	Standard Deviation	T-Statistic	P-value	Decision
H1	SIWES -> Adaptability	0.187	0.214	0.114	1.644	0.100	Reject
H2	SIWES -> Analytical & Critical Thinking	0.339	0.373	0.091	3.71	0.000	Accept
H3	SIWES -> ICT	0.226	0.278	0.097	2.333	0.020	Accept
H4	SIWES -> People Management	0.355	0.385	0.107	3.324	0.001	Accept
H5	SIWES -> Problem Solving	0.429	0.457	0.066	6.545	0.000	Accept

Source: Author's work

The data presented in the results indicates an 18% decrease in the adaptability competence of the students as the SIWES unit increases. Additionally, Table 3 reveals a significant positive impact between SIWES and the following competencies: a) analytical and critical thinking (β= 0.33, t=3.71, P= 0.000), b), ICT (β= 0.22, t=2.33, P= 0.020), c) people management (β= 0.35, t=3.32, P= 0.001), and d) problem-solving (β= 0.42, t=6.54, P= 0.000). As a result, hypotheses H2 – H5 were accepted based on this data. The SIWES program could serve as a platform to develop people management, ICT, problem-solving, analytical, and critical thinking competencies of the tertiary education students in Nigeria.

6. DISCUSSION

The existing literature lacks substantial evidence regarding the effectiveness of the student Industrial Work Experience Scheme (SIWES) programme and its impact on developing the most sought-after competencies required by the 21st-century modern organization among participating students in Nigeria. This study aimed to demonstrate how SIWES could enhance the competencies of higher education graduates using health information management students as a sample. Previous research on competency development and graduate employability suggests that exposing students to practical situations and on-the-job knowledge outside the classroom can prepare graduates for the

workforce (Alao et al., 2022; Daerego, Victor, 2023). The results from the structural model indicated that four out of the five competencies (critical thinking, adaptability, ICT, people management, and problem-solving competencies) hypothesized in this study exhibited a direct-positive relationship with the student industrial work experience scheme (SIWES). However, adaptability competence did not show a direct and positive relationship with the student industrial work experience scheme. The skills and attributes examined in this study are crucial for producing well-prepared graduates for future employment. The findings of this study support the views of Bashir et al. (2022), Wu and Molnar (2022), and Omonijo et al. (2019), who claim that SIWES plays a crucial role in enhancing academic performance and developing competencies. The results of this study further support the findings of Anyeana and Ochuba (2019), indicating that students demonstrate improved technical knowledge acquisition during experimental education (SIWES) after gaining real-life work experience.

7. PRACTICAL IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

There is a dearth of research on the practical aspects of the Student Industrial Work Experience Scheme (SIWES). The outcomes of this study offer great potential for higher education institutions, students, and employers. The findings indicate that the SIWES programme can enhance student competencies, highlighting higher education institutions' crucial role in SIWES. This underscores the necessity for stronger collaboration between industry, higher education institutions, and students. When higher education institutions clearly understand the industry's sought-after skills and competencies, they can design their curricula and SIWES programme accordingly, providing students with more authentic workplace experience in preparation for future jobs. The current study sampled health information management students. Further research could be conducted to sample students across universities in Nigeria in the future to validate the findings from this study.

8. CONCLUSION

This study investigated whether the Students Industrial Work Experience Scheme (SIWES) could predict students' employability competencies. The study assessed five competencies: adaptability, analytical and critical thinking, ICT, people management, and problem-solving. It utilized a sample of health information management students and employed a partial least squares structural equation model approach to analyze the relationship between SIWES and these competencies. The results revealed a strong positive correlation between four of the five employability competencies and SIWES. The study underscores the significant role of SIWES in developing students' competencies, highlighting its substantial benefits for participating students. This study suggests that higher education providers enhance the SIWES programme to develop student competencies for employability.

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REFERENCES

Abraham-Ibe, I. G. (2015). SIWES as an imperative tool for enhancing students' academic performances in OTM department. *International Journal of Management Sciences and Humanities,* 3(1), 162–175.

Adegbite, W. M., Adeosun, O. T. (2021). Fourth industrial revolution skillsets and employability readiness for future job. *Global journal of social science studies*, 7(1), 35–49. https://doi.org/10.20448/807.7.1.35.49

Ahmed, F., Fattani, M. T., Ali, S. R., Enam, R. N. (2022). Strengthening the Bridge Between Academic and the Industry Through the Academia-Industry Collaboration Plan Design Model. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.875940

Alao, O., Alao, T. (2022). Achieving the effectiveness of the Students Industrial Work Experience Scheme for sustainability of the Nigerian economy. *International Journal of Work-Integrated Learning,* 23(3), 393–404.

Al-Alawneh, M. (2014). Measuring students' employability skills as they are perceived at Yarmouk University. *Canadian Social Science,* 10 (1), 10–20. https://10.3968/j.css.1923669720141001.4023

Bashir, I. B., Sunusi, M. I., Abubakar, Y. K. (2022). Information, communication and technology (ict) usage in teaching practice (tp) and students' industrial work experience scheme (siwes). Problems & prospects. *Watari Journal*, 6(1), 163–170.

Barclay, D., Thompson, R., Higgins, C. (1995). The Partial Least Squares (PLS) approach to causal modeling: Personal computer use as an illustration. *Technology Studies*, 2(2), 285–309.

Chin, W. W. (2010). How to write up and report PLS analyses. In V. E. Vinzi, W. W. Chin, J. Henseler, H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods, and applications: (2)* (pp. 655–690). Springer handbooks of computational statistics series.

Dada, L., Ojetunde, S. (2020). Quality and unemployment issues in curriculum and Graduate outputs of Nigerian Universities. *Journal of Positive Psychology and Counselling, 6*, 134–145.

Daerego, I. T., Victor, N. (2023). Influence of students' industrial work experience scheme (SIWES) on employment opportunities of adult education graduates from Universities in Rivers State. *International Journal of Social Sciences and Management Studies*, *2*(2), 45–59.

Eichmann, B., Goldhammer, F., Greiff, S., Pucite, L., Naumann, J. (2019). The role of planning in complex problem-solving. *Elsevier: Computers & Education, 128*, 1–12.

Fuchs K (2022). The importance of competency development in higher education: Letting go of rote learning. *Frontier Education, 7*, 1004876. https://doi/10.3389/feduc.2022.1004876

Hair, J. F., Hult, G. T. M., Ringle, C., Sarstedt, M. A. (2016), *Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2017b). *A primer on partial least squares structural equation modelling (PLS-SEM)* (2nd ed.). Sage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM*) (3rd ed.). Sage.

Henseler, J., Ringle, C. M., Sarstedt, M. (2016). A new criterion for assessing discriminant validity in variance-based structural equation modelling, *Journal of Academic Marketing Science*, *43*(1), 115–135.

Kenayathulla, H. B., Ahmad, N. A., Idris, A. R. (2019). Gaps between competence and importance of employability skills: evidence from Malaysia, *Higher Education Evaluation and Development*, *13*(2), 97–112. https://doi.org/10.1108/HEED-08-2019-0039

Kock, N. (2013). *WarpPLS 4.0 User Manual*. ScriptWarp Systems.

Maiunguwa, S. (2022). Emerging issues in science, technology and mathematics education (stem) internship [teaching practice (tp) and siwes]: challenges & prospects. *WATARI Multidisciplinary Journal of Science & Technology Education*, *6*(1), 1–13.

National Bureau of Statistics (2020). *Labour force statistics: unemployment and underemployment*, Report (Q4 2020). Retrieved from: https://www.nigerianstat. gov.ng/elibrary/read/1238

Omonijo D. O., Anyaegbunam, M. C., Nnatu, O. B., Ejor, S., Victoria Ajibola, Adeleke, V. A., Oluwunmi, A. O. Olowooere, E. I., Agubo, C. (2019). The Review of the Student Industrial Work Experience Scheme (SIWES) in Four Selected Countries. *Academic Journal of Interdisciplinary Studies, 8*(3), 158–169. https://doi/10.2478/ajis-2019-0055

Oswald-Egg, M. E., Renold, U. (2021). No experience, no employment: The effect of vocational education and training work experience on labour market outcomes after higher education. *Economics of Education Review*, *80*, 102065. https://doi.org/10.1016/j.econedurev. 2020.102065

Pang, E., Wong, M., Leung, C. H., Coombes, J. (2018). Competencies for fresh graduates' success at work: Perspectives of employers. *Industry and Higher Education,* 33(4), 095042221879233. https://doi.org/10.1177/0950422218792333

Rodzalan, Noor, Mohd Arif and Saat. (2020). Factors Influencing the Improvement of Students' Critical Thinking and Problem-Solving Skill: An Industrial Training Intervention. *International Journal of Emerging Technologies in Learning, 15*, 134. https://doi/ 10.3991/ijet.v15i22.16303

Suarta, I. M., Suwintana, I. K., Sudhana, I. F. P., Hariyanti, N. K. D. (2017). *Employability skills required by the 21st century workplace: A literature review of labor market demand.* Proceeding of International Conference on Technology and Vocational Teachers. Atlantis Press. doi: http://doi.org/10.2991/ictvt-17.2017.58

UNIDO (2017). *Skills Gap Assessment in Six Priority Sectors of Nigeria's Economy*. U. N. I. D. Organisation.

Usman, M. K. (2021). Students Industrial Work Experience Scheme as Correlate of Digital Skills and Competences among Emerging Librarians from Bayero University Library School. *African Journal of Library Arch. & Inf. Sc. 31*(1), 39–49.

Varma, C., Malik, S. (2023). TVET in the 21st Century: A Focus on Innovative Teaching and Competency Indicators. *IntechOpen*, 1–21. https://doi/10.5772/intechopen.112516

World Economic Forum. (2017). *The future of jobs and skills in Africa – preparing the region for the fourth industrial revolution.* Geneva: World Economic Forum.

Wu, H., Molnár, G. (2022). Complex problem-solving strategies from a cognitive perspective: The role of thinking skills. *Journal of Intelligence, 10*(3), 46. https://doi.org/10.3390/jintelligence10030046

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TOWARDS A CONCEPTUAL FRAMEWORK LINKING CREATIVE LEADERSHIP, EMPLOYEES' INTRAPRENEURSHIP BEHAVIOR AND MANAGERIAL INNOVATION

The present paper attempts to explore the relationship between creative leadership, employee intrapreneurship behavior, and managerial innovation. The endlessly changing environment faced by organizations led to the necessity of an in-time response and to the recognition of the place of creative leadership in fostering intrapreneurship and managerial innovation as a set of processes, practices, and tools leaders would adopt in order to create the conditions for an effective intrapreneurship. Based on a theoretical approach in which several papers were included, a conceptual model was developed in this research for a future empirical study, three relationships would be examined: the relationship between the dimensions of creative leadership and intrapreneurship, the effect of creative leadership on managerial innovation, and the moderating role of managerial innovation in the relationship between creative leadership and intrapreneurship. Lastly, this study seeks to highlight creative leadership as one of managerial innovation's drivers and to draw the attention of academics and actors in the organization to managerial innovation since it remains a developing topic in the literature.

Keywords: proactive behavior, stimulative creative leadership, integrative creative leadership, managerial practices, managerial innovation.

1. INTRODUCTION

Nowadays, economists, theorists, and researchers are no longer required to emphasize the volatile, uncertain, complex, and ambiguous environment that organizations are facing and to put stress on flexibility or responsiveness improvement by companies. Moreover, technological innovation and its impact on competitiveness and corporate performance have been widely discussed and demonstrated in the literature. Additionally, the manifestation of the Z-generation in the work environment continuously challenges and

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offers opportunities to organizations to seek adequate managerial practices, structures, and processes that would fit this generation's needs and expectations.

The COVID-19 pandemic has emphasized and confirmed Schumpeter's theories and contributions regarding entrepreneurship and innovation. Therefore, companies are expected to focus on how to do, and what actions to take for organizational competitiveness and sustainability, on leaders' roles, and on employee behavior since the rules of the environment have changed, or more specifically, the environment has changed (Mack et al., 2016). Additionally, economic actors are invited to consider managerial innovation; which addresses the social system of the organization, and is acknowledged as a non-technological innovation, supporting the argument that innovation is rather than a matter of technology; as more than a culture but a mindset since it contributes to an organization's competitiveness and leverages its performance and productivity (Volberda et al., 2013).

Consequently, creative leadership as a leadership style, is receiving increasing attention from scholars. It is nowadays considered essential and no longer an option for organizations to adopt but a necessity. Creative leaders contribute to the creation of an innovative and experimental culture through which collaboration, knowledge sharing, followers' creative behavior, and organizational learning are expected to be optimized and fostered. Hence, studies pointed out the importance of leadership for managerial innovation (e.g. Vaccaro et al., 2012), and for employee creativity, proactivity, innovativeness, and risk-taking behaviors (Nguyen et al., 2023; Hashem, Aluminate, 2023), in other words, intrapreneurship.

Finally, this paper aims to respond to the question of how the relationship between creative leadership, managerial innovation, and intrapreneurship can be conceptualized, then it suggests a conceptual model through which the relationship between creative leadership, managerial innovation, and employees' intrapreneurship behavior will be highlighted. We focus on three main theories: self-determination theory, leader-member exchange, and the knowledge-based view.

2. STUDY CONTEXTUALIZATION

This paper is grounded on self-determination theory (SDT), leader-member exchange theory (LMX), and the knowledge-based view (KBV), which will be accentuated on organizational learning (OL).

SDT characterizes employees' motivation toward intrapreneurship, this later provides employees with autonomy and is built on innovative, proactive, and risk-taking behaviors (Alghamdi, Badawi, 2023). SDT advances that individuals are motivated by personal growth, change, and development encompassed in the need for autonomy, relatedness, and competence (Nguyen et al., 2023). Furthermore, satisfying these needs leads employees to transform their intentions into implemented actions (Nguyen et al., 2022; Nguyen et al., 2023).

Leadership is expected to respond to these needs by providing support, mutual trust, empowerment, and material resources (Joo et al., 2014). LMX is, accordingly, a theory that refers to the quality of social exchange relationships between leaders and their followers. In this theory, numerous variables have been argued to be influenced by the quality of exchange between a leader and their followers, some of those variables can be enumerated: employee commitment, role conflict, innovativeness, and employee creativity (Jong, 2007; Joo et al., 2014). In this vein, creative leadership is outlined by Harris (2009) as ego-less

leadership aiming to foster autonomy and empowerment among their employees in the creativity process (in Randel, Jaussi, 2019).

Creativity as a major element in the creative leadership style, is described as the generation of novel and original ideas or solutions that are expected to be valuable regarding the development of products/services, procedures, processes, or ideas that can contribute to the organization's transformation (Amabile, 1996; Zhou, 1998). Consequently, idea generation is not the only element that represents creativity. Yet, it also concerns organizational problem-solving (Sohmen, 2015).

In this regard, employee creativity encompasses solution-finding by employees to existing problems (Sourchi, Jianqiao, 2015). following Joo et al. (2014), employee creativity refers to the ability of employees to come up with original, innovative, valuable, and appropriate solutions/ideas for the development or improvement of "products, services, practices, processes, and procedures" for the organization. Employee creativity leads to innovation capability, employee, and firm performance (Hassan et al., 2013; Ximenes et al., 2019).

Authors like woodman et al. (1993) have advanced several characteristics that would enhance employee creativity, one of these characteristics was the climate of a learning organization (in Joo et al., 2014) which consists of organizational capability of adaptation and renewal aligned with changes in its environment (Liao et al., 2008). OL is a concept that is defined by Leroy (1998) as the "interaction between individuals within an organization" that leads to, according to Senge et al. (1994), the generation of tangible activities and innovations in management methods and organizational structure to change the way of working. Furthermore, Morgan and Ramirez (1984) argue that OL happens through problem-solving, in which exploitative or explorative learning take place.

In the KBV, knowledge is perceived as a valuable and central resource for innovation. It mainly contributes to the process of problem-solving and value creation, as stated by Al-Husseini et al. (2021): "Innovation depends on employees' knowledge, skills and experiences in the value creation process". Simultaneously, creative leadership refers to the ability of leaders to stimulate and enhance employees' creativity (Tierney, 2008). Following the definition of Mumford et al. (2002), creative leadership contributes to the generation of new ideas by the followers through "the exercise of influence".

Moreover, creative leadership describes a leader as an individual who possesses the capacity to produce a wellspring of creativity through the transformation of various gathered knowledge and ideas from different origins by employing effective management of their relationship with the team members (Hashem, Alhumeisat, 2023). In this vein, the role of leaders is then to foster knowledge-sharing and learning through collective interactions within the organization.

Finally, this study is conceptual research, dealing with concepts and theories contrary to empirical research, which relies on data validation. Jaakkola (2020) argues that conceptual studies "are not without empirical insights but rather built on theories and concepts that are developed and tested through empirical research" showing that these two types of research are interdependent. The conceptual framework is built by the selection and examination of theories and concepts from the literature, which are then analyzed and synthesized. This study included articles from different fields and sectors. Research engines, encompass Scopus, Emerald, and Google Scholar, were adopted to serve as the main source for this research using keywords such as "management innovation", "managerial innovation", "creative leadership", "innovative leadership", "intrapre-

neurship" and the combination of key words to find appropriate books or articles that respond to the research objective.

3. CREATIVE LEADERSHIP AND MANAGERIAL INNOVATION

Managerial innovation is identified by Hamel (2006) as changes in the way managers ensure their work, in terms of activities coordination, orientation determination, decision-making process, and employee motivation (Vaccaro et al., 2012). Managerial innovation is therefore highlighted in "new management practices, processes, or structures" (Vaccaro et al., 2012).

In this current paper, we consider managerial innovation as a construct of three main dimensions that are used in different management innovation studies: structural, managerial practices, and managerial processes dimensions (Guzman, Espejo, 2019; Hassi, 2019; Li et al., 2022; Vaccaro et al., 2012; Yang et al., 2020). The structural dimension refers to how communication occurs between the organization's members, and how flexibility is promoted regarding the operating level (Kraśnicka et al., 2016; Vaccaro et al., 2012). Managerial processes focus on routines that characterize the work of managers. Whereas, the third dimension reflects the practices that managers or leaders do regularly, such as talent development or employee tasks and objectives allocation (Vaccaro et al., 2012).

When it comes to the relationship between leadership and managerial innovation, the study conducted by Vaccaro et al. (2012) in private Dutch companies has shown that leadership positively influenced managerial innovation, regarding the organizational size, in this same study, in smaller and less complex companies, transactional leadership contributed more to managerial innovation; whereas, followers are more encouraged to adopt creative thinking and are more intellectually stimulated in larger and more complex companies via transformational leadership which has been found to contribute the most to managerial innovation.

In the same vein, García-Morales et al. (2012) concluded in their study, in the sector of automotive and chemicals in Spain, that leadership positively impacts organizational performance through innovation. Additionally, OL is defined as the process by which members of an organization share knowledge that will be incorporated into the organization's body of knowledge. OL is, accordingly, recognized as a mediator in the relationship between leadership and managerial innovation (García-Morales et al., 2012).

Mainemelis et al. (2015) suggested a multi-context creative leadership framework. Therefore, three conceptualizations are distinguished: directive creative leadership, integrative creative leadership, and facilitative creative leadership (Mainemelis et al., 2015). Directive creative leadership highlights the leaders' innovative behavior, expressed differently, it focuses on the role of a leader in generating a creative vision or idea that will be followed and materialized by their team members (Sternberg, 2003; Mainemelis et al., 2015).

Regarding the context of our paper, we will focus on integrative and stimulative creative leadership since they are consistent with SDT, LMX, and KBV theories. These two conceptualizations highlight the relationship and collaboration between creative leadership and their team members, wherein stimulative and integrative leaders adopt tools and practices to provide an innovative environment and climate characterized in employees' autonomy and relatedness for an effective intrapreneurship, and wherein OL is stimulated through knowledge sharing and members exchanging their creative ideas.

Additionally, we seek to draw attention on how creative leadership affects employees' intrapreneurship behavior as a part of our aspiration in this paper. Yet, directive leadership emphasizes a leader who adopts such behaviors (innovativeness, proactiveness, and risk-taking behaviors) and being the one generating creative thinking without necessarily investing in their followers' creative thinking.

Integrative creative leadership is aligned with collective creativity, where new insights and ideas result from a collective in which individuals share their past experiences to provide solutions to distinguished problems (Abecassis-Moedas, Gilson, 2018). Besides, as mentioned by Mainemelis et al. (2015), this conceptualization highlights the role of a leader in putting together professionals and followers and their creative ideas for problem-solving and developing new insights. Stimulative creative leadership describes the role played by a leader as a facilitator by stimulating and fostering creativity within their employees (Abecassis-Moedas & Gilson, 2018). Facilitative creative leaders are concerned with introducing new tools, methods, and an appropriate climate to facilitate employees' creative thinking (Alharbi, 2021). Considering the positive influence that leaders have on employees' creativity which was suggested by scholars (Amabile, 1988; Woodman et al., 1993; Ford, 1996), facilitative creative leadership was determined and found to be the style that impacts employee creativity the most (Mainemelis et al., 2015).

Managers tend to adopt leadership styles to fit and fulfill the organization's vision and employees' needs. In this vein, Liao et al. (2017) found that innovation is influenced by leadership through the full mediation of organizational learning in financial and information technology companies located in Taiwan, however, leadership did not directly influence managerial innovation. In another study, containing a sample of teachers from postsecondary schools in Taiwan, leadership influenced managerial innovation, and organizational learning partly mediated this relationship (Hsiao, Chang, 2011).

Leaders contribute to the implementation of innovative processes and practices as managerial innovations that aim to stimulate organizational learning, the proposition of creative solutions by employees, and their innovative capacity (Brest, 2011; Chantelot, Errami, 2015; Santos-Vijande, Álvarez-González, 2007). Hence, creative leaders tend to create a climate and a culture of creativity and innovation. Moreover, according to SDT, employees who manifest innovative behaviors require an environment and creative managers or leaders who encourage their autonomy and innovative mindset.

Boyer (2020), in the managerial innovation context, defines a 'co-responsible' culture and presents this latter as what reflects the current management. Accordingly, he argues that co-responsibility is about considering employees as responsible, accountable, and autonomous individuals. Hence, creative leaders in a co-responsible culture will need to promote managerial innovation pillars, as described by the LMX, the quality of exchange and collaboration between leaders and their followers is crucial for various outcomes, e.g. innovativeness, proactivity, and risk-taking behaviors. Managerial innovation pillars consist of two main categories: being together and doing together (Boyer, 2020). Integrative and stimulative creative leaders tend to foster collective intelligence and be inclusive regarding creative thinking and problem-solving.

Both the two categories of managerial innovation encompass three pillars (Boyer, 2020). Being together includes strengthening confidence in the relationship leader-collaborator, developing employees' accountability, and enhancing well-being at work through adequate climate and culture. Doing together involves optimizing collaboration to stimulate knowledge sharing and organizational learning, cultivating agility through a flexible structure as one example, and boosting creativity.

Consequently, managerial innovation consists of "the implementation" by creative leaders "of new management practices, promoting, in particular, creativity, cross-functionality, flexibility, collective intelligence, and initiative-taking, and seeking to foster an entrepreneurial culture that values risk-taking, initiative, and responsibility" (in Ahras, 2020).

4. CREATIVE LEADERSHIP AND INTRAPRENEURSHIP

Intrapreneurship is defined by Carrier (1996) as "the introduction and implementation of a significant innovation for the firm by one or more employees working within an established organization" (Rigtering, Weitzel, 2013). Most studies on intrapreneurship accentuate three dimensions that will be adopted for this paper, namely: innovative, risk-taking, and proactive behaviors (Moriano et al., 2014; Farrukh et al., 2021; Nguyen et al., 2023; Alghamdi, Badawi, 2023; Ye et al., 2023).

Through findings consistent with the LMX theory, Moriano et al. (2014) have concluded in their empirical study of the public and private sectors in Spain that when managers or leaders support their employees through coaching, stimulate their creative thinking, and place trust as a pillar in their relationship, they influence their members' intrapreneurial behavior regarding their proactive, innovative, and risk-taking behaviors. Furthermore, organizational identification–which emphasizes how employees embrace the organization's goals and aims – plays a role in partially mediating this relationship (Moriano et al., 2014).

Proactive behavior consists of employees that challenge their organizational status quo by seeking solutions, providing creative ideas, and exceeding their job expectations, it is, in fact, a "self-initiated behavior that aims to cause positive change for current situations" (Zhou et al., 2024). Integrative and stimulative creative leaders, in contrast to some other styles of leadership, aim to foster novel idea generation among employees, they are constantly seeking new ways of working, problem-solving, employee motivation, and organizing (Reiter-Palmon, Illies, 2004).

Besides, when they are creative, open to new ideas, and challenge their employee's creativity and the organization's status quo (Nguyen et al., 2023); they, according to social learning theory as a mechanism in organizational learning, inspire their followers to imitate their behavior and be in turn proactive (Zhou et al., 2024). Hence, in their study, Zhou et al. (2024) concluded that proactive behavior is influenced by creative leadership through the moderation of conformity value. In the same study, proactive behavior moderates the link between creative leadership and innovative behavior.

Employees' innovative behavior concerns the introduction and promotion by individuals in their work of creative and worthwhile ideas regarding their organizational process/procedures or products/services (Janssen, Van Yperen, 2004). Thus, intrapreneurship seeks to spot opportunities and the generation of novel ideas by intrapreneurs. Meanwhile, the role of leadership in contributing to the organization's climate and culture has been recognized (Reiter-Palmon, Illies, 2004), and as stated earlier, leadership contributes to managerial innovation through the implementation of new practices, processes, or structures.

As empowerment is a part of managerial innovation, it consists of offering autonomy to collaborators and pushing them to participate in providing creative solutions and risk-taking when it comes to problem-solving (Hassi, 2019), empowerment reflects a quality of LMX highlighted in a climate of trust, confidence, autonomy, and employee development

through learning by doing. Therefore, the SDT argues that when such conditions are available, employee motivation and engagement are fulfilled, hence they transform their intentions into actions, accordingly, empowering creative leadership seems to influence employees' innovative behavior, thus, through employee job engagement (Li et al., 2023).

The literature provided numerous leadership styles, many of which have been acknowledged to influence intrapreneurship. In their critical review, Verma and Mehta (2020) provided a list of leadership styles influencing intrapreneurship: transformational leadership, temporal leadership, open leadership, charismatic leadership, and positive leadership. Moreover, in a wider perception, LMX has been recognized to be positively linked to employees' intrapreneurship behavior, and this relationship was mediated by organizational climate (Farrukh et al., 2021). In addition, creative leadership can directly influence employee intrapreneurship behavior (Hashem, Alhumeisat, 2023).

Intrapreneurs as creative and innovative individuals are devoted to experimentation through risk-taking and mistakes-making (Stoll & Temperley, 2009). Hence, risk-taking behavior is outlined by Moriano et al. (2014) as "venturing into unknown areas for the organization" which reflects a process of learning by doing through trial and error and challenging what is already known as paradigms by intrapreneurs (Keamy, 2016). Therefore, when the quality of integrative stimulative leadership and employee relationship is good, employees become courageous regarding the idea of risk-taking because, as opposed to transactional leadership, if they fail in their creative actions, they will not be sanctioned by their leader but will be, in an organizational learning perspective, encouraged to learn from their failure and develop their competencies (Farrukh et al., 2021).

Accordingly, Vargas-Halabí et al. (2017) and Alam et al. (2020) suggested considering intrapreneurship from three and four perspectives respectively. The first element is to view this concept as "efforts, orientations or activities performed within the organization" (Vargas-Halabí et al., 2017) such as the creation of an in-organization new venture for an ongoing product/service. Another perspective is to consider intrapreneurship as individual or collective entrepreneurial actions taken within the organization to respond to an environment built by executives to foster risk-taking as one example. The third is to focus on the aim of these actions, which encompasses the generation of innovation on behalf of the organization, to illustrate: new products/services, new technology, and new processes. Last but not least, is to view this phenomenon as a "strategic revolution" related to a "culture of self-renewal" (Alam et al., 2020).

Finally, intrapreneurship corresponds to the process of adopting a leadership style that promotes individual or collective/collaborative efforts in identifying worthwhile opportunities or in the problem-solving process, through the generation of original or creative ideas that can be materialized into impactful innovative solutions to support organizational sustainability (Vargas-Halabí et al., 2017).

5. MANAGERIAL INNOVATION AS A MODERATOR

In the systematic review published by Khosravi et al. (2019), managerial innovation was found to provide dynamic and learning capabilities as outcomes. Learning capability is one of the mechanisms that stimulates organizational learning. When the organizational climate is built on innovation spirit and managerial innovation pillars, employee creativity will receive "more pressure" (Nguyen et al., 2023). Besides, employees will tend to share knowledge and contribute to the organizational learning process (Nguyen, Malik, 2020).

Moreover, when creative leaders implement or adopt new management practices, processes, or structures, they will act as "internal change agents" (Birkinshaw et al., 2008) by anticipating change resistance, and will tend to seek adequate methods and tools to improve their LMX quality level to manage change, and work on their follower's acceptance of new practices. Managerial innovation also provides the organization with an outcome of innovation performance (Khosravi et al., 2019).

While considering the role of integrative supportive creative leadership as an internal agent of change regarding managerial innovation implementation and in fostering employee intrapreneurship behavior dimensions (Nguyen et al., 2023; Zhou et al., 2024; Li et al., 2023; Hashem, Alhumeisat, 2023); a climate of innovation stimulated by managerial innovation will drive leaders to promote and benefit from this climate and use motivation tools by leveraging implemented managerial innovation practices as resources, this is because they will be more expected to foster intrapreneurial behavior as their organization goal and as a way of reaching corporate performance (Augusto Felício et al., 2012).

Managerial innovation is represented through four characteristics, it "must be implemented" in the organization, "new" to the organization, "bring change to the way managers do their work", and "aims to further organizational goals" (Rahimli, 2021). Along these lines, e-marketing leads to changes in marketing traditional approaches through the use of digital technologies for product/service promotion; managers will need to adapt to this new strategy when it is implemented within the organization and it will be considered an innovative practice, and due to the new environment exigences, this practice is what is nowadays expected to improve organizational performance.

Hence, e-marketing is a managerial innovation that moderates the relationship between creative leadership and employee intrapreneurship behavior (Hashem, Alhumeisat, 2023). Finally, regarding the relationship between creative leadership, online knowledge sharing, and employee creativity, managerial innovation moderates the link creative leadership-knowledge sharing. In addition, knowledge sharing impacts employee creativity (Zhou et al., 2024).

6. DISCUSSION

In light of the different evidence identified in the literature on the possible existing relationships between the three variables highlighted in this paper, we suggest the model shown in Figure 1. Moreover, based on the review presented in the last sections, three propositions are developed, (1) creative leadership positively affects managerial innovation, (2) creative leadership positively affects intrapreneurship, and (3) managerial innovation moderates the relationship between creative leadership and intrapreneurship.

Creative leadership was identified as an important variable affecting intrapreneurship and managerial innovation. The literature review revealed that leaders are expected to foster their followers' creativity, risk-taking, and proactive behaviors by managing factors already underlined by the literature as impacting employees' creativity. Furthermore, based on the previous mentioned studies, we suggest that when it comes to leadership styles, integrative leadership fosters collective creativity and problem-solving by encouraging the collaboration of several employees belonging to different divisions, departments, or structures. Regarding facilitative creative leadership, employee creativity and innovative behavior will be highlighted more. Hence, creative leaders adopt new managerial practices, processes, or structures to create an adequate and supportive organizational culture.
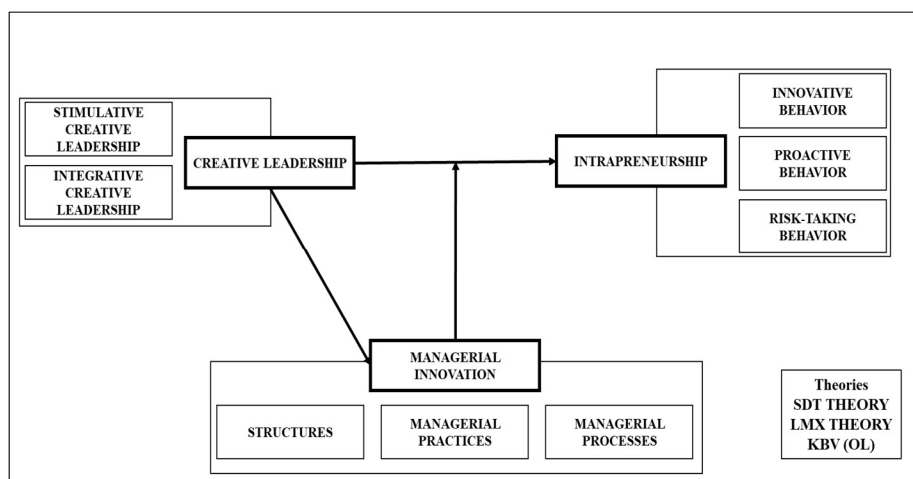
Figure 1. Model conceptualization

Source: Authors' conceptualization.

Therefore, in the context of stimulative leadership, intrapreneurship will mostly be recognized as an employee behavior which is highly expected to be a bottom-up process. whereas, integrative leadership can encompass both bottom-up and top-down processes, given that intrapreneurship is also about generating novel ideas and turning them into products/services, practices, structures, or new processes. Hence, innovative ideas can be suggested by employees, top management, or leaders.

The literature provided numerous examples regarding managerial innovations generated and/or adopted by organizations, for instance: total quality management, lean production, just-in-time production, Taylorism, Fordism, new structure forms (U-form, M-form, vertical integration…), employee-driven problem-solving, and self-managed teams, whereby teams are given autonomy and responsibility to enable them to make choices and establish priorities. However, this list is hardly all-inclusive, though managerial innovation remains a relatively recent concept. Therefore, measuring it in an established organization appears challenging.

Nevertheless, several authors suggested measurement models which may be adopted to validate the conceptual model developed in this study (eg, Krasnicka et al., 2016; Vaccaro et al., 2012; Terziovski, 2010). Since the environment is continuously evolving, some items can be included, such as green practices, adoption of artificial intelligence at work, and use of virtual collaboration tools. This can also be considered an opportunity for researchers to suggest new managerial innovation measurement models.

The present conceptual framework is expected to be applicable in different sectors, for different organizational sizes, and especially, to various cultures. Existing measurement models that have been verified in the literature can be used to measure the variables, and they can be adjusted to fit the study's context. In this vein, an example of creative leadership measurement is the one suggested by Wen et al. (2017) and validated by Ye et al. (2022). Regarding intrapreneurship measurement, Farrukh et al. (2019) scale, which was confirmed by Farrukh et al. (2021) can be adopted. Finally, the research population can include managers, directors, and employees from different organizational levels.

7. CONCLUSION

To the best of our knowledge, the relationships between the three variables as presented in this paper are lacking in the literature. Hence, a conceptual framework linking creative leadership, managerial innovation, and employee intrapreneurship behavior within the framework of SDT, LMX, and OL theories is required. To establish a culture that will allow creative leaders to encourage intrapreneurship behavior, this study may assist several companies in examining the connections between these key variables and inviting them to implement new management practices, frameworks, or processes.

The VUCA (volatile, uncertain, complex, and ambiguous) and changing environment pushes organizations to become more agile and innovative to adapt to change and remain competitive. Therefore, this paper emphasizes why creative leadership is crucial for organizations in such conditions, and how it could be more effective through managerial innovation. Managers are, henceforth, invited to adopt this model by identifying the best innovative managerial practices that would help them promote a creative, risk-taking, and proactive organizational culture that leads employees to view themselves as entrepreneurs. Moreover, managers can think of new training programs that would focus on leaders' and followers' creative behavior and stimulate novel idea generation.

Furthermore, through this model, organizations can think of maintaining agility by adopting organizational structures and processes that would help them to quickly adapt, respond to change, and enhance intrapreneurial spirit, like a flat structure, which can also facilitate decision making, communication, and exchange between leaders and their followers.

The model lacks contextual and environmental variables and needs a larger theoretical perspective such as the adoption of contingency theory. In addition, creative leadership and intrapreneurship behavior also depend on personal characteristics and intrinsic motivation that cannot necessarily be integrated in SDT and LMX theories. However, by emphasizing LMX, SDT, and OL perspectives, this study provides insights on how, through the combination of these theories and the relationship between the three variables, organizations could identify key elements and factors (psychological, behavioral, and organizational) that would promote intrapreneurship behavior, collective intelligence, collaborative decision making, and what is more relevant, how to maintain creative leaders commitment to create such culture and help their organization recognize the importance of managerial innovations as technological ones.

Moreover, comparative empirical studies across other contexts or sectors can be conducted, and new scales tailored to the sector or country requirements can be developed to improve the reliability and applicability of future studies. Finally, other elements can be explored: 'how can this model help organizations enhance their performance', 'what would be its impact on organizational agility', 'on innovation capability', 'on organizational commitment', or 'on employees' motivation'.

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REFERENCES

Abecassis-Moedas, C., Gilson, L. L. (2018). Drivers and levels of creative leadership: An examination of choreographers as directive and integrative leaders. *Innovation*, *20*(2), 122–138. https://doi.org/10.1080/14479338.2017.1394793

Ahras, A. (2020). *L'innovation managériale en contexte algérien : Difficultés et perspectives. Approche par études de cas. Recherche sur les ressorts de l'innovation managériale face à un environnement entrepreneurial hostile*. [PhD Thesis]. Pau. Retrieved from: https://theses.hal.science/tel-04321559/document

Alam, M. Z., Nasir, N., Rehman, Ch. A. (2020). Intrapreneurship concepts for engineers: A systematic review of the literature on its theoretical foundations and agenda for future research. *Journal of Innovation and Entrepreneurship*, *9*(1), 8. https://doi.org/10.1186/s13731-020-00119-3

Alghamdi, A. A., Badawi, N. S. (2023). Intrapreneurship at the Individual-Level: Does Psychological Empowerment Matter? *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *8*(5), 53. https://doi.org/10.26668/businessreview/2023.v8i5.1672

Alharbi, I. B. A. (2021). Innovative Leadership: A Literature Review Paper. Open Journal of Leadership, *10*(3), Article 3. https://doi.org/10.4236/ojl.2021.103014

Al-Husseini, S., El Beltagi, I., Moizer, J. (2021). Transformational leadership and innovation: The mediating role of knowledge sharing amongst higher education faculty. *International Journal of Leadership in Education*, *24*(5), 670–693. https://doi.org/10.1080/13603124.2019.1588381

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in organizational behavior*, *10*(1), 123–167.

Amabile, T. M. (1996). Creativity in context. Boulder, CO. 1998). La creatividad como um valor dentro del proceso educativo. *Psicologia Escolar e Educacional*, *2*, 43–51.

Augusto Felício, J., Rodrigues, R., Caldeirinha, V. R. (2012). The effect of intrapreneurship on corporate performance. *Management Decision*, *50*(10), 1717–1738. https://doi.org/10.1108/00251741211279567

Birkinshaw, J., Hamel, G., Mol, M. J. (2008). Management Innovation. *Academy of Management Review*, *33*(4), 825–845. https://doi.org/10.5465/amr.2008.34421969

Boyer, F. (2020). *L'innovation managériale en action : 50 pratiques managériales innovantes. S'inspirer et apprendre des entreprises qui ont su concilier épanouissement individuel et performance collective*. Eyrolles.

Brest, P. (2011). Le leadership dans les organisations publiques : Le cas des chefs d'établissement de l'enseignement secondaire. *Politiques et management public*, *28*(3). Retrieved from: https://journals.openedition.org/pmp/4406

Carrier, C. (1996). Intrapreneurship in Small Businesses: An Exploratory Study. *Entrepreneurship Theory and Practice*, *21*(1), 5–20. https://doi.org/10.1177/104225879602100101

Chantelot, S., Errami, Y. (2015). Stimuler le potentiel créatif des environnements urbains-La nécessaire transformation du leadership public. *Revue française de gestion*, 41(250), 139-158. https://doi.org/10.3166/RFG.250.139-158

Farrukh, M., Lee, J. W. C., Shahzad, I. A. (2019). Intrapreneurial behavior in higher education institutes of Pakistan: The role of leadership styles and psychological empowerment. *Journal of Applied Research in Higher Education*, *11*(2), 273–294. https://doi.org/10.1108/JARHE-05-2018-0084

Farrukh, M., Meng, F., Raza, A. (2021). Believe they can succeed, and they will: Intrapreneurial behavior and leadership. *European Journal of Innovation Management*, *25*(3), 661–679. https://doi.org/10.1108/EJIM-10-2020-0393

Ford, C. M. (1996). A Theory of Individual Creative Action in Multiple Social Domains. *The Academy of Management Review*, *21*(4), 1112. https://doi.org/10.2307/259166

García-Morales, V. J., Jiménez-Barrionuevo, M. M., Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of business research*, *65*(7), 1040–1050. https://doi.org/10.1016/j.jbusres.2011.03.005

Guzman, F. A., Espejo, A. (2019). Introducing changes at work: How voice behavior relates to management innovation. *Journal of Organizational Behavior*, *40*(1), 73–90. https://doi.org/10.1002/job.2319

Hamel, G. (2006). The why, what, and how of management innovation. *Harvard business review*, *84*(2), 72.

Harris, A. (2009). Creative leadership: Developing future leaders. *Management in Education*, *23*(1), 9–11. https://doi.org/10.1177/0892020608099076

Hashem, T. N., Alhumeisat, E. K. I. (2023). Examining the Moderating Role of e-marketing: Creative Leadership as a Source of Intrapreneurship within Marketing Department. *Journal of System and Management Sciences*, *13*(2), 83–100. https://doi.org/10.33168/JSMS.2023.0206

Hassan, M. U., Malik, A. A., Hasnain, A., Faiz, M. F., Abbas, J. (2013). Measuring employee creativity and its impact on organization innovation capability and performance in the banking sector of Pakistan. *World Applied Sciences Journal*, *24*(7), 949–959. 10.5829/idosi.wasj.2013.24.07.13253

Hassi, A. (2019). Empowering leadership and management innovation in the hospitality industry context: The mediating role of climate for creativity. *International Journal of Contemporary Hospitality Management*, *31*(4), 1785–1800. https://doi.org/10.1108/IJCHM-01-2018-0003

Hsiao, H.-C., Chang, J.-C. (2011). The role of organizational learning in transformational leadership and organizational innovation. *Asia Pacific Education Review*, *12*(4), 621–631. https://doi.org/10.1007/s12564-011-9165-x

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review*, *10*(1–2), 18–26. https://doi.org/10.1007/s13162-020-00161-0

Janssen, O., Van Yperen, N. W. (2004). Employees' Goal Orientations, the Quality of Leader-Member Exchange, and the Outcomes of Job Performance and Job Satisfaction. *Academy of Management Journal*, *47*(3), 368–384. https://doi.org/10.5465/20159587

Jong, J. P. J. (2007). Individual Innovation: The connection between leadership and employees' innovative work behavior. *EIM Amsterdam, The Netherlands*. Retrieved from: https://pure.uva.nl/ws/files/4343764/52860_Jong_jeroen_de_Ind_innovation_JJO_cropped.pdf, 29.03.2024.

Joo, B.-K. (Brian), Yang, B., McLean, G. N. (2014). Employee creativity: The effects of perceived learning culture, leader–member exchange quality, job autonomy, and proactivity. *Human Resource Development International*, *17*(3), 297–317. https://doi.org/10.1080/13678868.2014.896126

Keamy, R. (2016). Creative leadership? 'It's just the norm'. *School Leadership & Management*. Retrieved from: https://www.tandfonline.com/doi/full/10.1080/13632434.2016.1196173.

Khosravi, P., Newton, C., Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, *37*(6), 694–707. https://doi.org/10.1016/j.emj.2019.03.003

Kraśnicka, T., Głód, W., Wronka-Pośpiech, M. (2016). Management innovation and its measurement. *Journal of Entrepreneurship, Management and Innovation*, *12*(2), 95–122.

Leroy, F. (1998). *L'apprentissage organisationnel: Une revue critique de la littérature*. Acte de la VIIème conférence internationale de l'AIMS. Retrieved from: http://www. sietmanagement.fr/wp-content/uploads/2017/12/Leroy.pdf, 14.12.2023.

Li, Y., Chen, H., Wei, L., Wei, L. (2022). COVID-19 Pandemic and SMEs Performance Decline: The Mediating Role of Management Innovation and Organizational Resilience. *Frontiers in Public Health*, *10*. https://doi.org/10.3389/fpubh.2022.944742

Li, Z., Qiu, C., Zeng, K., Wang, F. (2023). Gain or loss: The double-edged effect of empowering leadership on employees' innovative behaviours. *Chinese Management Studies*, *17*(2), 233–250. https://doi.org/10.3389/fpubh.2022.944742

Liao, S., Fei, W.-C., Liu, C.-T. (2008). Relationships between knowledge inertia, organizational learning and organization innovation. *Technovation*, *28*(4), 183–195. https://doi.org/10.1016/j.technovation.2007.11.005

Liao, S.-H., Chen, C.-C., Hu, D.-C., Chung, Y.-C., Liu, C.-L. (2017). Assessing the influence of leadership style, organizational learning and organizational innovation. *Leadership & Organization Development Journal*, *38*(5), 590–609. https://doi.org/10.1108/LODJ-11-2015-0261

Mack, O., Khare, A., Krämer, A., Burgartz, T., eds. (2016). *Managing in a VUCA World*. Springer International Publishing. https://doi.org/10.1007/978-3-319-16889-0

Mainemelis, C., Kark, R., Epitropaki, O. (2015). Creative Leadership: A Multi-Context Conceptualization. *Academy of Management Annals*, *9*(1), 393–482. https://doi.org/10.5465/19416520.2015.1024502

Morgan, G., Ramirez, R. (1984). Action Learning: A Holographic Metaphor for Guiding Social Change. *Human Relations*, *37*(1), 1–27. https://doi.org/10.1177/001872678403700101

Moriano, J. A., Molero, F., Topa, G., Lévy Mangin, J.-P. (2014). The influence of transformational leadership and organizational identification on intrapreneurship. *International Entrepreneurship and Management Journal*, *10*(1), 103–119. https://doi.org/10.1007/s11365-011-0196-x

Mumford, M. D., Scott, G. M., Gaddis, B., Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The leadership quarterly*, *13*(6), 705–750. https://doi.org/10.1016/S1048-9843(02)00158-3

Nguyen, M., Sharma, P., Malik, A. (2023). Leadership styles and employee creativity: The interactive impact of online knowledge sharing and organizational innovation. *Journal of Knowledge Management*. https://doi.org/10.1108/JKM-01-2023-0014

Nguyen, T.-M., Malik, A. (2020). Cognitive processes, rewards and online knowledge sharing behaviour: The moderating effect of organisational innovation. *Journal of Knowledge Management*, *24*(6), 1241–1261. https://doi.org/10.1108/JKM-12-2019-0742

Nguyen, T.-M., Ngo, L. V., Paramita, W. (2022). Turning lurkers into innovation agents: An interactionist perspective of self-determinant theory. *Journal of Business Research*, *141*, 822–835. https://doi.org/10.1016/j.jbusres.2021.11.087

Rahimli, N. (2021). *The adoption of open innovation as a form of management innovation and its impact on individuals*. The Hong Kong Polytechnic University. Retrieved from: https://theses.lib.polyu.edu.hk/handle/200/11568, 4.03.2024.

Randel, A. E., Jaussi, K. S. (2019). Giving Rise to Creative Leadership: Contextual Enablers and Redundancies. *Group & Organization Management*, *44*(2), 288–319. https://doi.org/10.1177/1059601119834089

Reiter-Palmon, R., Illies, J. J. (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *The leadership quarterly*, *15*(1), 55–77. https://doi.org/10.1016/j.leaqua.2003.12.005

Rigtering, J. P. C., Weitzel, U. (2013). Work context and employee behaviour as antecedents for intrapreneurship. *International Entrepreneurship and Management Journal*, *9*(3), 337–360. https://doi.org/10.1007/s11365-013-0258-3

Santos-Vijande, M. L., Álvarez-González, L. I. (2007). Innovativeness and organizational innovation in total quality oriented firms: The moderating role of market turbulence. *Technovation*, *27*(9), 514–532. https://doi.org/10.1016/j.technovation.2007.05.014

Senge, P. M., Kleiner, A., Roberts, C. (1994). *The fifth discipline fieldbook: Strategies and tools for building a learning organization*. Nicholas Brealey.

Sohmen, V. S. (2015). Reflections on creative leadership. *International Journal of Global Business*, *8*(1), 1–14. https://doi.org/10.13140/RG.2.1.1620.3366

Sourchi, S., Jianqiao, L. (2015). Understanding High-Performance Work System (HPWS) as related to creativity and job engagement in Kurdistan and Canada. *European Journal of Business and Management*, *7*(20), 92–106.

Sternberg, R. J. (2003). WICS: A Model of Leadership in Organizations. *Academy of Management Learning & Education*, *2*(4), 386–401. https://doi.org/10.5465/amle.2003.11902088

Stoll, L., Temperley, J. (2009). Creative leadership: A challenge of our times. *School Leadership and Management*, *29*, 65–78. https://doi.org/10.1080/13632430802646404

Terziovski, M. (2010). Innovation practice and its performance implications in small and medium enterprises (SMEs) in the manufacturing sector: A resource-based view. *Strategic Management Journal, 31*(8), 892–902. https://doi.org/10.1002/smj.841

Tierney, P. (2008). Leadership and employee creativity. *Handbook of organizational creativity*, 95123.

Vaccaro, I. G., Jansen, J. J., Van Den Bosch, F. A., Volberda, H. W. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of management studies*, *49*(1), 28–51. https://doi.org/10.1111/j.1467-6486.2010.00976.x

Vargas-Halabí, T., Mora-Esquivel, R., Siles, B. (2017). Intrapreneurial competencies: Development and validation of a measurement scale. *European Journal of Management and Business Economics*, *26*(1), 86–111. https://doi.org/10.1108/EJMBE-07-2017-006

Verma, S., Mehta, M. (2020). Effect of Leadership Styles on Corporate Entrepreneurship: A Critical Literature Review. *Organization Development Journal*, *38*(2), 65–74.

Volberda, H. W., Van Den Bosch, F. A. J., Heij, C. V. (2013). Management Innovation: Management as Fertile Ground for Innovation. *European Management Review*, *10*(1), 1–15. https://doi.org/10.1111/emre.12007

Wen, L., Zhou, M., Lu, Q. (2017). The influence of creative leadership on employee creativity: Scale development and validation. *Management Review*, *29*(2), 129.

Woodman, R. W., Sawyer, J. E., Griffin, R. W. (1993). Toward a Theory of Organizational Creativity. *The Academy of Management Review*, *18*(2), 293. https://doi.org/10.2307/258761

Ximenes, M., Supartha, W. G., Manuati Dewi, I. G. A., Sintaasih, D. K. (2019). Entrepreneurial leadership moderating high performance work system and employee creativity on employee performance. *Cogent Business & Management*, *6*(1), 1697512. https://doi.org/10.1080/23311975.2019.1697512

Yang, D., Li, L., Jiang, X., Zhao, J. (2020). The fit between market learning and organizational capabilities for management innovation. *Industrial Marketing Management*, *86*, 223–232. https://doi.org/10.1016/j.indmarman.2019.12.007

Ye, D., Xie, W., Zheng, L. (2023). Unleashing Intrapreneurial Behavior: Exploring Configurations of Influencing Factors among Grassroots Employees. *Behavioral Sciences*, *13*(9), Article 9. https://doi.org/10.3390/bs13090724

Ye, P., Liu, L., Tan, J. (2022). Creative leadership, innovation climate and innovation behaviour: The moderating role of knowledge sharing in management. *European Journal of Innovation Management*, *25*(4), 1092–1114. https://doi.org/10.1108/EJIM-05-2020-0199

Zhou, J. (1998). Feedback valence, feedback style, task autonomy, and achievement orientation: Interactive effects on creative performance. *Journal of applied psychology*, 83(2), 261.

Zhou, X., Zhong, J., Zhang, L. (2024). Action Speaks Louder: The Role of Proactive Behavior between Creative Leadership and Employees' Creativity. *Behavioral Sciences*, *14*(3), Article 3. https://doi.org/10.3390/bs14030257

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THE IMPACT OF PARENTHOOD ON MOTHERS' WORK VALUES: EVIDENCE FROM MONGOLIA

This study aims to investigate work values of mothers in Mongolia, specifically, focusing on how parenthood shapes their work-related desires and priorities. The research uses focus group discussions with 22 mothers aged 26 and above to highlight the dynamic nature of work values during this significant life transition. The findings reveal that more than half of the participants experienced shifts in their work values after having children, with many transitioning from intrinsic to extrinsic values due to increased financial demands, particularly in cases of divorce or limited household income. Mothers with stable financial situations or larger families prioritized childcare or entrepreneurship over traditional employment, while younger mothers or those with fewer children emphasized career advancement and autonomy. The study underscores the importance of flexible workplace policies and empathetic leadership in supporting working mothers and enabling them to achieve a sustainable work-life balance.

Keywords: work values, parenthood, work-life balance, intrinsic work values, extrinsic work values.

1. INTRODUCTION

The transition to parenthood is one of the most profound life events, exerting significant psychological, social, and physical influences on individuals. This transformative experience not only reshapes overall life values but also has the potential to alter work values. Work values, defined as the beliefs and attitudes individuals hold regarding the desirable work outcomes, are generally considered stable after entering the workforce, typically around the age of 22 (Jin, Rounds, 2012). However, studies suggest that while work values become more consistent with age, they remain susceptible to change during major life transitions such as marriage, parenthood, and career shifts (Blandin, Jones, Yang, 2023; De Fruyt, 2006)

Traditionally, becoming a mother has been linked to a significant decline in women's workforce participation, as balancing professional responsibilities with caregiving has historically posed substantial challenges (Berniell, Berniell, Mata, Edo, Marchionni, 2021). However, recent trends indicate that many mothers continue to engage in paid employment

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even after having children, particularly in countries like Mongolia. As a democratic nation, Mongolia actively promotes women's participation in the workforce, recognizing their critical role in contributing to household income. For instance, recent data from the National Statistics Office of Mongolia (2023) reveal that only 12% of unemployed individuals in the country are women who are pregnant or caring for children. Despite these advancements, there remains a noticeable lack of research exploring how childbearing influences mothers' work values, particularly in Mongolia's unique sociocultural context.

Therefore, this research aims to investigate Mongolian mothers' work values, focusing on how parenthood shapes their work-related desires and priorities. Understanding the diverse dimensions of work values – intrinsic, extrinsic, altruistic, social, and prestige-related – is essential for organizations aiming to optimize their human resource strategies. Aligning job roles, reward systems, and organizational cultures with these values can enhance employee satisfaction and engagement and significantly improve retention rates.

This study employs focus group interviews with 22 working mothers, each with up to five children to achieve a comprehensive understanding. The findings will provide valuable insights into the dynamic relationship between parenthood and work values, contributing to academic discourse and practical HR management strategies. By addressing the specific experiences of mothers in Mongolia, this study offers a nuanced perspective on how work values evolve in response to significant life transitions.

2. LITERATURE REVIEW

Understanding Work Values

Work values are defined as the needs, desires, and outcomes that individuals seek from their employment, including factors such as pay, promotion, autonomy, and personal achievement (Lyons, Higgins, Duxbury, 2009). These values encompass both intrinsic motivations–such as self-actualization and self-esteem – and extrinsic motivations, like fulfilling financial needs. According to the studies, there are five distinct work values were identified.

- Intrinsic values refer to internal rewards gained from work, including personal growth, fulfillment, creativity, learning, and self-actualization. Employees driven by intrinsic values focus on the work itself and seek opportunities for meaningful engagement (Deci, Ryan, 1985).
- Extrinsic values focus on external rewards associated with work, including salary, benefits, job security, and working conditions. Individuals prioritizing extrinsic values often seek employment with organizations offering competitive compensation, career advancement opportunities, and stable work environments.
- Altruistic values reflect a commitment to helping others and contributing to the well-being of the community or society (Dose, 1997). These values are especially prominent in professions such as healthcare, education, and social services, where the primary motivation is service rather than material reward (Batson, 1991). Altruistic employees prioritize fairness, integrity, and justice in workplace decisions (Kish-Gephart et al., 2010).
- Social values emphasize the importance of relationships and interactions in the workplace (Durkheim, 1893). The National Association of Social Workers (NASW) identifies six essential employee social values: service, social justice, dignity and worth of the individual, the significance of human relationships, integrity, and competence (Banks, 2025).

- <u>Status-related values</u> pertain to the outward symbols of success, such as prestigious job titles and working for well-regarded companies. While status values are often considered extrinsic, they can overlap with intrinsic motivations when they align with personal goals and self-esteem. Employees who value status are likely to seek roles that offer visibility, recognition, and opportunities to enhance their professional reputation (Schwartz, 1992).

Work values are not static; they can evolve over time, influenced by various life events and personal experiences, as well as environmental influences (Kalleberg, Marsden, 2019). Studies investigating the stability and evolution of work values frequently utilize two complementary approaches: rank-order stability and mean-level change (De Fruyt, 2006). Rank-order stability focuses on the hierarchical nature of values. According to Schwartz (1992) and Rokeach (1973) values are prioritized based on their significance; thus, they may shift even into late adulthood. Conversely, mean-level change examines whether there is a general increase or decrease in specific work value dimensions over time.

Individual, cultural, and economic factors shape one's work values. For example, growing up in poverty often leads to stronger extrinsic work values later in life (Johnson, 2002; Johnson, Sage, Mortimer, 2012; Kohn, Schooler, 1969). Additionally, each life stage, age, gender, economic and financial situation, and cultural differences play crucial roles in forming one's work values. For instance: age is one of the crucial determinants for work value. According to Jin & Rounds (2012) formation of work value is considered particularly sensitive during youth and young adulthood, and stabilizes during late adolescence. Significantly, intrinsic work values rise during college (18–22) but decline afterward, while extrinsic values follow a U-shaped pattern, decreasing during college and increasing in early adulthood (22–26) – only extrinsic values gained importance by the mid-to-late twenties, as other values declined.

Gender is another significant determinant of work value. For instance, men generally have extrinsic work values; however, women place more importance on intrinsic values than men. Additionally, women with higher education levels tend to have intrinsic rather than extrinsic work values (Gahan, Abeysekera, 2009). According to a recent study (2024), women place greater importance on prestige and recognition, reflecting social changes related to gender equality and empowerment.

Marriage is a life event that significantly influences individuals' values. Particularly, married men tend to increase extrinsic motivation towards their work (Meng, Yang, 2023).

Work values are also shaped by cultural and socio-economic contexts (Elizur, Borg, Hunt, Beck, 1991; Hauff, Kirchner, 2015). People from different cultures often have distinct work values, influenced by their economic situation and cultural traditions. For example, Hauff and Kirchner (2015) identified four patterns of work values "moderate demanders," "high demanders", "post-modern demanders", and "income and security demanders" – across different countries, demonstrating how economic and cultural contexts influence these values.

As for Mongolia, evolving socio-economic landscape, influenced by globalization and economic modernization, may gradually shift work values, blending enduring cultural traditions with the demands of a competitive market economy. Such a transition reflects the dual pressures of maintaining traditional communal values while adapting to modern economic realities, as seen in other rapidly developing nations (Inglehart, Baker, 2000). This dynamic interplay between tradition and modernity underscores the complexity of work values in transitional economies like Mongolia.

Parenthood influences on work values

Life transitions are a major factor influencing one's work values. Parenthood is one of the significant changes during one's lifetime, undeniably influencing one's work value. According to Lips (2009) mothers prioritize family over work, resulting in decreased commitment to their jobs and consequently lower earnings. Additionally, there is an understanding of the motherhood penalty, which refers to the disadvantages that mothers experience in the labor market, including reduced opportunities and lower wages compared to fathers and childless women. Research has found that mothers face significant wage penalties, often earning 5–10% less per child, while being perceived as less committed and competent in the workplace (Budig, England, 2001). Additionally, studies highlight that employers may discriminate against mothers during hiring and promotions, further exacerbating gender inequalities in the labor market (Correll, Benard, Paik, 2007).

Jin and Rounds (2012) state that extrinsic work values increase steadily after age 26. According to Johnson (2005) parenthood increases the emphasis on extrinsic work rewards, such as salary and job security. However, this trend does not apply to married women, for whom marriage appears to diminish the importance attached to such rewards, even when they are mothers. Jurgensen (1978) also states that differences in work values for women before and after marriage are relatively minor. However, there is a lack of studies on married women's work values, specifically after childbearing in recent years. Lips (2009) explained that mothers tend to prioritize family over work. Williams (2000) stated that when women were single, their work identity is often strongly linked to professional achievements. However, when they become mothers, their priority shifts into being a good parent, over their professional identity. This can lead to reevaluating career goals, work commitments, and personal values related to work.

H1: Women's work values change after childbearing

On the other side, single mothers demonstrate a heightened financial responsibility for their children (Youngblut, Brady, Brooten, Thomas, 2000). Notably, single mothers exhibit similar shifts in work values as fathers, traditionally viewed as primary economic providers. As for Mongolia, the number of single mothers significantly increased in the last 5 years, from 34 thousand to 55 thousand mothers (National statistics office of Mongolia, 2024). Therefore, in this study, we examine married and single mothers and see if there is a significant difference.

H2: Single mothers' work values tend to turn into extrinsic work values

Due to family responsibilities, mothers tend to prefer jobs with flexible working hours. For example, the birth of the first child leads to a substantial increase in informal employment among mothers, rising by 38% (Berniell, Berniell, Mata, Edo, Marchionni, 2021). According to the U.S. Bureau of Labor Statistics (2024), approximately 71% of mothers with children at home participate in the workforce. Additionally, mothers and women are more likely to work preferred hours and hold satisfying jobs in countries with extensive flexible work policies (Ruppanner, Lee, Huffman, 2018). Research indicates that a higher level of work-life balance is associated with increased emotional well-being among working mothers (K.S, Talwar, 2024).

H3: Mothers prefer work-life balance

As Super (1995) noted, external changes in the labor market, social policy, and educational or promotional opportunities can influence people to redefine what is

important. Significantly, the financial situation regarding the work values or preferences of mothers and families with children must be highly considered.

Maslow's material need theory (1943) posits that unmet material needs drive individuals to prioritize material concerns. The economic situation is one of the significant determinants for one's work values (Johnson, Sage, Mortimer, 2012). For example, research indicates that individuals in economically disadvantaged regions prioritize extrinsic work values due to limited resources and the need for financial stability (Boehnke, Stromberg, Regmi, Chhokar, 2004) Similarly, Hofstede's cultural dimensions highlight how long-term economic conditions shape societal attitudes toward work, with more affluent societies favoring self-expression and autonomy. At the same time, economically constrained environments emphasize survival and stability (Hofstede, 2001). Therefore, as a developing economy in Mongolia, there are many economic struggles, such as high inflation and low salaries. For instance: As of November 2024, Mongolia's annual inflation rate reached 8.1%, primarily fueled by rising costs of electricity, rent, and services (Mongol Bank, 2024). Inflation is anticipated to stay elevated through the first half of 2025 before gradually easing (National statistics office of Mongolia, 2023).

H4: Mothers' work values in Mongolia tend to change into extrinsic work values

3. METHODOLOGY

This study employed a qualitative research methodology, focusing on focus group discussions (FGDs) to better understand the research topic. FGDs were chosen as the primary method because they allow for rich, detailed insights through interaction and dialogue among participants (Gibbs, 1997).

Participants were chosen based on specific criteria to ensure they could provide relevant insights into the research question. All participants were 26 or older, as it is assumed that work values are typically established by this age (Jin & Rounds, 2012). This age criterion ensured that participants had a certain level of career experience and clearer perspectives on their professional priorities.

By selecting participants whose families varied in size and focusing on a specific age range, the study aimed to explore not only the individual work values but also potential gaps or differences between the groups. This approach supported the goal of understanding how parenting responsibilities and family dynamics influence work values.

Sample Size and Grouping

A total of 22 participants were selected, each having one or five children. Fourteen participants were recruited through social media advertisements, while the remaining participants were friends and acquaintances of the researcher. The sample size and structure were designed to provide both breadth and depth, ensuring a wide range of experiences while enabling a focused exploration of key themes. Participants were grouped based on the number of children they have, allowing the researcher to examine whether differences in work values exist among these groups. To ensure effective group dynamics and meaningful insights, three separate FGDs were conducted:

- Group 1: Participants with three or more children.
- Group 2: Participants with two children.
- Group 3: Participants with one child.

Each group comprised 7–8 participants, which balanced capturing diverse perspectives with maintaining manageability for in-depth discussions. This grouping structure facilitated a comparative analysis of work values across different family sizes.

Pre-Discussion Preparation:

- The moderator collected demographic information from all participants before the discussion. This data was used to facilitate comparisons between participants.
- The moderator provided an overview of the theory underlying work values and the main problem under investigation. Participants were given time to reflect on their initial work values and any changes they might have experienced.

The focus group discussions were conducted in person to foster a warm and comfortable atmosphere, encouraging open dialogue and enabling the collection of more detailed information. The discussion was guided by semi-structured questions to explore the participants' experiences and perspectives. The discussions were structured around the following questions:

- *Question 1: Have you ever reflected on or been concerned about your work values? Are you familiar with the concept of work values? If yes, how would you define them?*
- *Question 2: How would you describe your work values before having children? What aspects of your career or professional life were most important to you then?*
- *Question 3: Do you think your work values have changed after having children? If yes, how have your work values shifted since becoming a parent? What priorities or aspects of work have become more or less significant?*
- *Question 4: What were the most significant factors contributing to these changes in your work values? How have your personal experiences, workplace policies, or family dynamics influenced your perspective on work?*

Table 1. Demographic information of participants

Group	Participants	Age	Number of children	Age (first pregnancy)	Age (last pregnancy)	Total child caring years	Marriage status
Group 1	Participant 1	38	4	26	35	5 years	Married
	Participant 2	39	5	26	33	8 years	Married
	Participant 3	29	3	24	27	4,5 years	Married
	Participant 4	36	4	26	31	4 years	Married
	Participant 5	30	3	24	25	3 years	Divorced
	Participant 6	37	3	29	33	5 years	Married
	Participant 7	36	4	23	35	8 years	Married
	Participant 8	35	3	28	33	4,5 years	Married
Group 2	Participant 9	29	2	25	26	2,5 years	Divorced
	Participant 10	35	2	28	31	3 years	Married
	Participant 11	29	2	22	25	5 years	Married
	Participant 12	27	2	24	-	2 years	Divorced
	Participant 13	30	2	25	26	3 years	Married
	Participant 14	38	2	20	23	2 years	Divorced
	Participant 15	26	2	24	25	2,5 years	Married

Table 1 (cont.). Demographic information of participants

Group	Participants	Age	Number of children	Age (first pregnancy)	Age (last pregnancy)	Total child caring years	Marriage status
Group 3	Participant 16	28	1	21	-	1 years	Married
	Participant 17	34	1	26	-	1,5 years	Married
	Participant 18	27	1	24	-	9 months	Single
	Participant 19	30	1	26	-	10 months	Married
	Participant 20	34	1	24	-	2 years	Divorced
	Participant 21	36	1	33	-	3 years	Married
	Participant 22	42	1	39	-	2 years	Married

Source: FGD result.

Data Analysis

The qualitative data collected from the FGDs were analyzed thematically, identifying patterns and themes that emerged from the discussions. The demographic information collected before the discussions was also used to contextualize and compare the findings.

This methodological approach enabled the researcher to gain an in-depth understanding of the changes in work values among mothers with higher education and their influencing factors.

4. RESULTS

According to the result, the average age of group 1 participants was 35, while the average age of group 2 mothers was 26. The average age of group 1 participants was 32; hence, this group was the most experienced mothers. Figure 1 presents all participants' average age, experience and childcaring years.
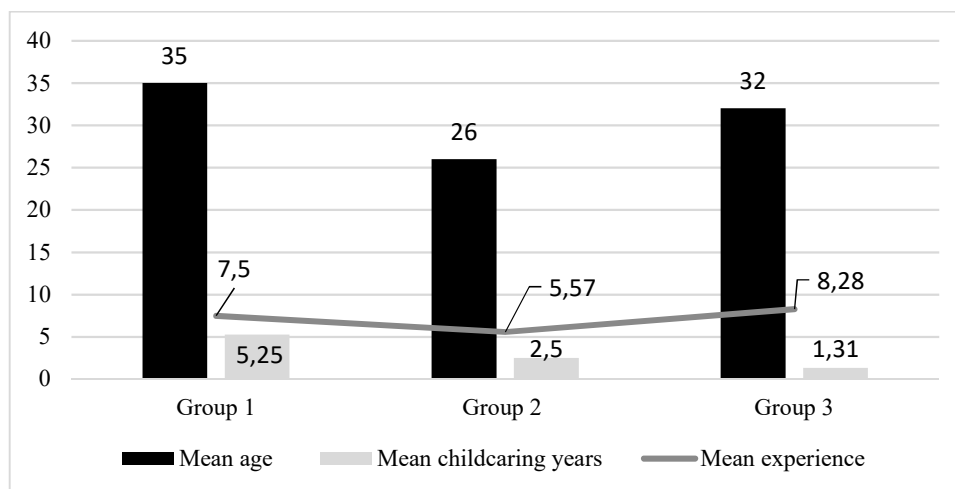

Figure 1. Average age, experience and chilcaring years of participants

Source: FGD resultSixteen out of twenty-two participants were married, while six mothers were single mothers. Figure 2 illustrates all participants' family status by percentage.
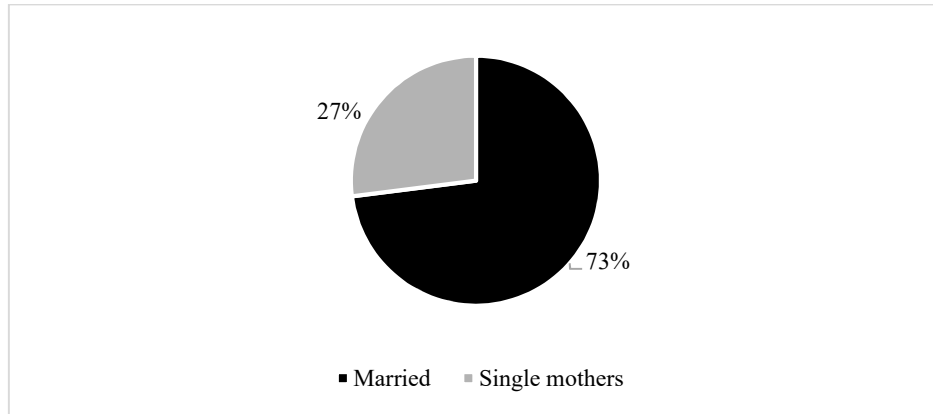
Figure 2. Participant's family status by percentage

Source: FDG result.

Question 1: Have you ever reflected on or been concerned about your work values? Are you familiar with the concept of work values? If yes, how would you define them?

Eight participants answered that they had never considered work values before this interview. The remaining participants had somehow considered why they worked and what their priorities were. However, most participants had never heard of the term "work values" before. Some participants explained that they had been thinking about it seriously after giving birth.

Question 2: How would you describe your work values before having children? What aspects of your career or professional life were most important to you then?

Fifteen out of twenty-two participants described their work values as intrinsic, four participants agreed that their work values were extrinsic. Two participants highlighted that their priority was status-related, while one participant described her values as altruistic. Majority of participants answered that they were aimed to develop themselves professionally, also described as the social dimension was crucial as well after their most prioritized values. Since work values have a nature that rank their needs and expectations towards work, in this interview, we investigate the most prioritized values over the rest of values.

Question 3: Do you think your work values have changed after having children? If yes, how have your work values shifted since becoming a parent? What priorities or aspects of work have become more or less significant?

Thirteen participants assume that their work values changed after childbearing, and the remaining participants describe that their work values are the same before having children. There is no clear indication that the number of children affects work value change. Group 1,2,3 participants have an equal number of participants that change their work values after childbearing.

Table 2. Shows participants ' work-related information and work values

Groups	Participants	Industry	Job	Work experience	Working or not?	Initial work values	Work values after childbearing
Group 1	Participant 1	Mining	HSE	10 years	No	Extrinsic	Extrinsic
	Participant 2	F&B	Chef	12 years	Yes	Intrinsic	Social
	Participant 3	Trade	Accountant	3 years	Yes	Intrinsic	Extrinsic
	Participant 4	F&B	Supervisor	5 years	Yes	Intrinsic	Intrinsic
	Participant 5	Transportation	Sales Manager	7 years	Yes	Intrinsic	Extrinsic
	Participant 6	Healthcare	Doctor	8 years	No	Altruistic	Intrinsic
	Participant 7	Real estate	Broker Owner	6 years	Yes	Extrinsic	Extrinsic
	Participant 8	Retail	Designer	9 years	Yes	Intrinsic	Intrinsic
Group 2	Participant 9	Retail	Supervisor	5 years	Yes	Intrinsic	Extrinsic
	Participant 10	IT	CEO	9 years	Yes	Status	Status
	Participant 11	Hospitality	Operation Manager	3 years	Yes	Intrinsic	Extrinsic
	Participant 12	Retail	Chief Accountant	3 years	Yes	Intrinsic	Extrinsic
	Participant 13	Hospitality	General Manager	6 years	Yes	Intrinsic	Status
	Participant 14	Trade	Foreign Trade Manager	11 years	Yes	Intrinsic	Extrinsic
	Participant 15	Entertainment	Clerk	2 years	No	Intrinsic	Intrinsic
Group 3	Participant 16	Food and Beverage	Branch Manager	5 years	Yes	Status	Extrinsic
	Participant 17	Retail	CEO	11 years	Yes	Intrinsic	Status
	Participant 18	IT	IT Engineer	2 years	Yes	Intrinsic	Intrinsic
	Participant 19	Transportation	Logistic Manager	7 years	Yes	Intrinsic	Exrinsic
	Participant 20	Retail	Sales Manager	10 years	Yes	Extrinsic	Extrinsic
	Participant 21	Real estate	HR Manager	9 years	No	Intrinsic	Intrinsic
	Participant 22	Construction	Head of Sales Department	14 years	Yes	Intrinsic	Status

Source: FGD result.

The importance of extrinsic rewards and social status gradually increases after becoming a mother. Most mothers consistently highlight that work-life balance is their top priority, particularly after becoming parents. They emphasize that family takes precedence over work after having children. Notably, mothers in Group 1 demonstrate a diminished desire to work under someone else's authority but exhibit a strong passion for starting their own businesses. In contrast, younger respondents, typically those with one or two children, maintain a keen interest in re-entering the workforce and continue striving for professional growth.

Mothers over the age of 30 want autonomy in their professional lives. This need stems from their life stage or the experience of motherhood, emphasizing the importance of having decision-making power and maintaining self-governance in their workplaces. This desire for autonomy reflects a broader need for professional respect and agency.

Question 4: What were the most significant factors contributing to these changes in your work values? How have your personal experiences, workplace policies, or family dynamics influenced your perspective on work?

Financial circumstances, work-life balance, and a lack of social interaction are the key factors influencing the shift in values among mothers. Many mothers feel behind professionally due to time spent at home, which motivates their desire to succeed in the workplace. Additionally, they wish to engage in more social activities to enhance their personal and professional connections,

However, many participants expressed concerns about adapting to a working mother's lifestyle. Mothers commonly fear that spending too much time at work might make their children feel neglected or ill. This concern is particularly pronounced in Mongolia, where harsh winters and high air pollution make illnesses more common, especially for young children.

As a result, mothers strongly prefer workplaces that empathize with their unique challenges. They value leaders who are willing to accommodate urgent family needs, such as allowing flexible arrangements to care for a sick child. This level of understanding is essential to achieving a sustainable work-life balance.

5. DISCUSSION

According to the result, thirteen participants describe that their work values change after having children; however, there is no clear difference between groups. Six participants stated that their work values did not change after having children. For them, staying home to care for their children felt like a temporary break from work rather than a shift in priorities. The majority of the participants described that their work values change after childbearing. Therefore, it can be assumed that Hypothesis 1 (Women's work values change after childbearing) partially supported.

Age is crucial in this study, as all participants were over 26 years old, at which individuals are generally considered mature and have established work values. However, no specific insights emerged regarding the influence of age on work values overall. That said, the majority of participants over the age of 30 shifted toward extrinsic work values. This finding aligns with the statement by Jin and Rounds (2012) which suggests that by the mid-to-late twenties, extrinsic values gain prominence as other values decline.

Marriage also plays a significant role in shaping work values. Hypothesis 2 posits that single mothers are more likely to adopt extrinsic work values due to financial burdens. The results support this hypothesis, as four out of six single mothers shifted toward extrinsic work values. Therefore, it can be reasonably assumed that Hypothesis 2 holds validity. For married mothers, seven participants reported a change in their work values after having children. Notably, two of these mothers shifted toward status-related work values, highlighting diversity in how motherhood influences work values among married women.

Hypothesis 4 posits that mothers in Mongolia place greater importance on extrinsic values than other work values. The results reveal that the work values of eight participants shifted to extrinsic values, while three participants' work values transitioned to status-related values. This suggests that financial circumstances gradually drive these shifts toward extrinsic values.

Notably, five participants stated that their work values became more extrinsic after having children – not by choice but due to their life circumstances. For instance, Participant 5 explained that raising three children incurs significant costs, and her husband's salary was

insufficient to meet their needs. Consequently, she felt compelled to prioritize earning more money, despite not previously focusing on financial rewards when choosing a job. Similarly, another participant shared that providing for her two children independently became challenging after her divorce. As a result, she had no choice but to prioritize financial stability and rewards in her career.

However, this may differ for families with stable financial incomes. Some participants with 3–5 children expressed a lack of interest in returning to work, primarily due to the time constraints associated with childcare responsibilities. Finding a workplace that accommodates their needs and priorities is often challenging. As a result, many of these participants preferred starting their own businesses. For example, Participant 6, a 37-year-old mother with three school-aged children, shared her perspective. She explained that her interest in returning to work significantly declined after having three children. Before becoming a mother, she prioritized helping others, but her primary focus shifted to caring for her children. She noted that working becomes less of a priority for families with stable financial situations, especially those with larger families. Raising three children requires substantial time and effort, and if parents choose not to take on these responsibilities themselves, hiring a nanny would incur costs equivalent to one person's salary. Additionally, she mentioned that once her children are old enough to care for themselves, she plans to work on building a family business.

Many participants expressed that they would be happy if there was an opportunity to work in a job that offered flexible work hours and sick leave. This concern is particularly pronounced in Mongolia, where harsh winters and high air pollution make illnesses more common, especially for young children. This supports Hypothesis 3, that posits mothers prefer work-life balance.

Most mothers also mentioned that they do not plan to have more children. Career-focused mothers, in particular, place greater importance on their professional lives than on expanding their families. For instance, one participant from Group 2 emphasized that she would not have more children, as having two was what she had planned. She desired to focus on advancing her career, believing her dedication to her profession would inspire her children. Surprisingly, Participant 1 shared a unique perspective. Having previously worked in the mining sector, she set her salary expectations very high compared to what most companies in Mongolia offer. As a result, she cannot consider working for companies that offer lower salaries, even if they provide other benefits such as a supportive social environment, flexible hours, or additional perks.

The result shows that the majority of the hypotheses were supported. Table 3 indicates hypotheses

Table 3. Hypotheses

	Hypotheses	Supported/Not Supported
H1	Women's work values change after childbearing	Partially supported
H2	Single mothers' work values tend to turn into extrinsic work values	Partially supported
H3	Mothers prefer work-life balance	Supported
H4	Mothers' work values in Mongolia tend to change into extrinsic work values	Partially supported

Source: Author's contribution.

Financial circumstances, work-life balance, and a lack of social interaction are the key factors influencing the shift in values among mothers. Many mothers feel behind professionally due to time spent at home, which motivates their desire to succeed in the workplace. As a result, mothers strongly prefer workplaces that empathize with their unique challenges. They value leaders who are willing to accommodate urgent family needs, such as allowing flexible arrangements to care for a sick child. This level of understanding is essential to achieving a sustainable work-life balance.

This study was conducted exclusively in Mongolia and is limited by the specific experiences of its participants. Additionally, a more comprehensive exploration of factors influencing work value changes is necessary to provide a deeper understanding. The study primarily focuses on how work values shift after childbirth and the impact of childcare-related responsibilities on mothers' work values. Future research could benefit from a broader participant base and consideration of additional variables to better capture the nuances of work value changes in diverse contexts.

6. CONCLUSIONS

The study highlights significant shifts in work values among mothers in Mongolia after having children. The results show that more than half of the participants experienced changes in their work values following childbirth. Notably, many participants shifted toward extrinsic work values, a change often attributed to the increased financial demands of raising children, particularly in divorce cases or limited family income.

However, these work value changes were not uniform across participants. Mothers with stable financial situations or larger families often preferred to focus on childcare or pursue entrepreneurial ventures instead of returning to traditional employment. In contrast, younger mothers or those with fewer children demonstrated a stronger desire to maintain or advance their professional careers, emphasizing their focus on career growth and autonomy.

The study also underscores the importance of flexible workplace policies that address working mothers' unique challenges. Empathetic leadership and adaptable work arrangements are essential for helping mothers achieve a sustainable work-life balance.

In conclusion, the findings suggest that while motherhood significantly influences work values, these changes are nuanced and shaped by individual life circumstances, financial stability, and personal priorities. For mothers in Mongolia, extrinsic values, work-life balance, and autonomy emerge as central themes in navigating their professional and family lives.

REFERENCES

Agarwal, H., Vaghela, P. S. (2018). *Work values of Gen Z: Bridging the gap to the next generation*. Parul University.

Banks, S. (2025). Social Work Values and the NASW Code of Ethics. *Journal of Social Work Values and Ethics, 23*(1), 45–58. https://doi.org/10.1080/10428232.2025.2455883

Batson, C. D. (1991). *The altruism question: Toward a social-psychological answer*. Lawrence Erlbaum Associates.

Begzsuren, T., Gungaa, B., Magee, D. (2022). *Impact of gender inequality on long-term economic growth in Mongolia.* Asian Development Bank.

Berniell, I., Berniell, L., de la Mata, D., Edo, M., Marchionni, M. (2021). Gender gaps in labor informality: The motherhood effect. *Journal of Development Economics, 152*, 102681. https://doi.org/10.1016/j.jdeveco.2021.102681

Beutell, N. J., Brenner, O. C. (1986). Sex differences in work values. *Journal of Vocational Behavior, 28*(1), 29–41. https://doi.org/10.1016/0001-8791(86)90032-2

Blandin, A., Jones, J. B., Yang, F. (2023). Marriage and work among prime – age men. *Federal Reserve Bank of Dallas Economic Review*.

Budig, M. J., England, P. (2001). The wage penalty for motherhood. *American Sociological Review, 66*(2), 204–225. https://doi.org/10.2307/2657415

Correll, S. J., Benard, S., Paik, I. (2007). Getting a job: Is there a motherhood penalty? *American Journal of Sociology, 112*(5), 1297–1339. https://doi.org/10.1086/511799

De Fruyt, F., Van Leeuwen, K. (2006). Assessing and interpreting personality change and continuity in patients treated for major depression. *Psychological Assessment, 18*(1), 71–80. https://doi.org/10.1037/1040-3590.18.1.71

Deci, E. L., Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* Springer. https://doi.org/10.1007/978-1-4899-2271-7

Dose, J. J. (1997). Work values: An integrative framework and illustrative application to organizational socialization. *Journal of Occupational and Organizational Psychology, 70*(3), 219–240. https://doi.org/10.1111/j.2044-8325.1997.tb00645.x

Durkheim, É. (1893). *The division of labor in society.* Free Press.

Elizur, D., Borg, I., Hunt, R., Beck, I. M. (1991). The structure of work values: A cross-cultural comparison. *Journal of Organizational Behavior, 12*(1), 21–38. https://doi.org/10.1002/job.4030120103

Ester, P., Braun, M., Vinken, H. (2006). Eroding work values. In E.V. Studies (Ed.), *Globalization, value change and generations* (pp. 89–113). Brill.

Gahan, P., Abeysekera, L. (2009). What shapes an individual's work values? An integrated model of the relationship between work values, national culture, and self-construal. *International Journal of Human Resource Management, 20*(1), 126–147. https://doi.org/10.1080/09585190802528524

Gibbs, A. (1997). Focus groups. *Social Research Update, 19*(8), 1–5.

Hauff, S., Kirchner, S. (2015). Identifying work value patterns: Cross-national comparison and historical dynamics. *International Journal of Manpower, 36*(2), 151–168. https://doi.org/10.1108/IJM-09-2013-0212

Jin, J., Rounds, J. (2012). Stability and change in work values: A meta-analysis of longitudinal studies. *Journal of Vocational Behavior, 80*(2), 326–339. https://doi.org/10.1016/j.jvb.2011.10.007

Johnson, M. K. (2002). The role of work and cultural values in occupational choice, satisfaction, and success: A theoretical statement. *Journal of Counseling & Development, 80*(1), 48–56. https://doi.org/10.1002/j.1556-6678.2002.tb00168.x

Johnson, M. K., Sage, R. A., Mortimer, J. T. (2012). Work values, early career difficulties, and the U.S. economic recession. *Social Psychology Quarterly, 75*(3), 242–267. https://doi.org/10.1177/0190272512451758

Jurgensen, C. G. (1978). An exploratory study of job perception and job satisfaction. *Journal of Applied Psychology, 63*(3), 329–340. https://doi.org/10.1037/0021-9010.63.3.329

Kaasa, A. (2011). Work values in European countries: Empirical evidence and explanations. *Revista de Management Comparat Internaţional, 12*(5), 852–862.

Kalleberg, A. L. (1977). Work values and job rewards: A theory of job satisfaction. *American Sociological Review, 42*(1), 124–143. https://doi.org/10.2307/2117735

Kalleberg, A. L., Marsden, P. V. (2019). Work values in the United States: Age, period, and generational differences. *The ANNALS of the American Academy of Political and Social Science, 682*(1), 43–59. https://doi.org/10.1177/0002716218822291

Kish-Gephart, J. J., Harrison, D. A., Treviño, L. K. (2010). Bad apples, bad cases, and bad barrels: Meta-analytic evidence about sources of unethical decisions at work. *Journal of Applied Psychology, 95*(1), 1-31. https://doi.org/10.1037/a0017103

Kirkpatrick, J. M. (2005). Family roles and work values: Processes of selection and change. *Journal of Marriage and Family, 67*(2), 352–369. https://doi.org/10.1111/j.0022-2445.2005.00121.x

Kohn, M. L., Schooler, C. (1969). Class, occupation, and orientation. *American Sociological Review, 34*(5), 659–678. https://doi.org/10.2307/2092300

Lee, S. J., Chang, K., Jordan, L. P., Park, N. (2004). Understanding the determinants of job retention: Work values and organizational dynamics in the context of Asia. *Journal of Business Psychology, 19*(3), 305–322. https://doi.org/10.1023/B:JOBU.0000040277.69295.6c

Lips, H. L. (2009). Work values, gender, and expectations about work commitment and pay: Laying the groundwork for the "motherhood penalty"? *Sex Roles: A Journal of Research, 61*(9–10), 667–676. https://doi.org/10.1007/s11199-009-9688-0

Lyons, S. T., Higgins, C. A., Duxbury, L. (2010). Work values: Development of a new three-dimensional structure based on confirmatory smallest space analysis. *Journal of Organizational Behavior, 31*(7), 969–1002. https://doi.org/10.1002/job.658

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396. https://doi.org/10.1037/h0054346

Meng, X., Yang, D. (2023). Marital status differences in the association of work motivation with burnout: A network perspective. *Current Psychology, 42*, 1–10. https://doi.org/10.1007/s12144-023-04789-3

National Statistics Office of Mongolia. (2023). *Mongolian labour force and forced labour survey*. National Statistics Office of Mongolia.

National Statistics Office of Mongolia. (2024). *Statistics of Female-Headed Households by Region, Province, and Capital City*. National Statistics Office of Mongolia.

Rokeach, M. (1973). *The nature of human values.* Free Press.

Ruppanner, L., Lee, R., Huffman, M. (2018). Do mothers benefit from flexible work? Cross-national evidence for work time, job quality, and satisfaction. *International Journal of Sociology, 48*(2), 170–187. https://doi.org/10.1080/00207659.2018.1446114

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1–65. https://doi.org/10.1016/S0065-2601(08)60281-6

Silva, F. E., Cabral, A. C., Santos, S. M., Barros, C. D. (2024). Work values in the context of the creative economy: a study of female artisan-entrepreneurs in natural cosmetics. *Cadernos EBAPE.BR*, https://doi.org/10.1590/1679-395120230131

Twenge, J. M., Campbell, S. M., Hoffman, B. J., Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117–1142. https://doi.org/10.1177/0149206309352246

U.S. Bureau of Labor Statistics. (2024). *Employment characteristics of families – 2023.* U.S. Department of Labor. Retrieved from: https://www.bls.gov/news.release/famee.nr0.htm.

Vansteenkiste, M., Lens, W., Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist, 41*(1), 19–31. https://doi.org/10.1207/s15326985ep4101_4

Warr, P. (2008). Work values: Some demographic and cultural correlates. *Journal of Occupational and Organizational Psychology, 81*(4), 751–775. https://doi.org/10.1348/096317907X263638

Williams, J. (2000). *Unbending gender: Why family and work conflict and what to do about it.* Oxford University Press.

Youngblut, J. M., Brady, N. R., Brooten, D., Thomas, D. J. (2000). Factors influencing single mother's employment status. *Health Care for Women International, 21*(2), 125–136. https://doi.org/10.1080/073993300245357

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NEGOTIATION STRATEGIES WITHIN REVERSE LOGISTICS COOPERATION

The objective of the paper is to present specificity of strategies, as well as styles of collaboration useful for negotiations of cooperation terms in the area of reverse logistics. The content of the article is the result of considerations conducted using desk research and analysis of bibliographic sources, primarily in the field of organization of activities in reverse logistics, conditions of cooperation with specialized service providers and negotiation strategies. Also, the experience of authors in the field of conflict management in logistics systems, both within an individual enterprise, as well as between cooperating enterprises is used in the research. The content of the article presents developed proposals of negotiation strategies in bilateral relations and in relations in which there are more participants. The main guidelines for the implementation of presented proposals of negotiation strategies are also included.

Keywords: reverse logistics, negotiations within reverse logistics, negotiation strategies, strategies of negotiations within reverse logistics.

1. INTRODUCTION

Among key conditions for effective functioning of any reverse logistics activity (regardless of the sector of operation) the efficient cooperation of all companies participating in such activity is highlighted. Meeting this condition is not an easy task, both in theoretical and methodological dimensions, i.e. creating and using effective cooperation tools, and in empirical terms, i.e. giving these tools the character of practical solutions.

Difficulties related to the design and use of such type of solutions result from the requirement of agreement of all parties on the conditions of cooperation, the need to create and implement efficient mechanisms for coordination of activities in time and space, as well as provision of necessary resources. This is particularly difficult in contemporary terms of reverse logistics activity, such as: complexity related first of all to the focus on sustainable development, the pressure to implement green logistics solutions, but also

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intensity of changes in the environment and the associated increase of operational risk. Treating reverse logistics as a part of activity in supply chain also requirement to ensure vulnerability of supply chain to changes in the environment, as well as ensuring resilience to increasing risk should be highlighted as important factors influencing cooperation. It should also be emphasized that restrictions related to implementation of national and international legal regulations regarding the handling of specific types of goods have a significant impact on the negotiation of cooperation terms (Małkus, 2020; Małkus, Kozina, 2022).

When preparing or changing cooperation terms, resolution of conflicts, that arise in cooperation a number of negotiations both bilateral and multilateral must be carried out. Appropriate tools for conducting such negotiations – just like in other areas of business activity – can be divided into general ones, i.e. negotiation strategies and styles, and more specific ones, i.e. negotiation techniques, tactics, tricks, principles, rules, etc. The objective of the paper is to present specificity of strategies, as well as styles of collaboration useful for negotiations of cooperation terms in the area of reverse logistics.

2. LITERATURE REVIEW

According to one of the early comprehensive descriptions of reverse logistics such concept can be defined as a process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or appropriate disposal (Rogers, Tibben-Lembke, 1999). The main activities, which can be distinguished in the area of reverse logistics include: product repair, refurbishing, upgrade, disassembly of a defective or used product to recover parts for reuse, recycling, as well as disposal of products with expired date of use and also disposal of waste (Tombido, Louw, Van Eeden, 2018). The implementation of these activities requires considering selection, separation, transport, storage as well as packaging. More specifically, the characteristics of the tasks related to the flow of goods in reverse logistics include (El Korchi, Milet, 2011; Małkus, 2020):

- collection of goods to be returned to supplier – it concerns identification of incorrectly delivered, redundant, defective products, damaged parts, materials as well as separation of products, parts and materials to be returned,
- collection and sorting of products with expired date of use, as well as damaged products, waste and recyclable materials – it relates to the qualification of mentioned types of goods for further actions (use of product components in re-manufacturing process, recycling, repair of product),
- recovery of parts suitable for remanufacturing by disassembly of products that turned out to be defective during quality control after the end of production or due to defects disclosed in the distribution channel,
- recovery of parts from end-of-life products for remanufacturing, which requires disassembling of these products, inspection and sorting as well as qualifying suitability for reuse,
- repair of damaged product (product value recovery),
- delivery of waste for disposal,
- recycling of materials (recovery of its value) for further use in manufacturing process.

Along with the listed, marked methods of restoring the value it should be added, that similarly to forward logistics activities related particularly to transport are emphasized among the main activities that also significantly affect the effectiveness of value creation in reverse logistics (Dowlatshahi, 2010). Taking into account four main aspects of economic utility, which influence the value of product for recipient (the usefulness of the form, place, time and possession), it should be indicated, that the aforementioned activities related to securing, preparation and processing relate to the utility of the product form, as well as possession in the area of reverse logistics. Transport is about the utility of time and place to use this product. It influences also possession of product.

Taking into consideration the specificity of negotiations within reverse logistics cooperation, the following features can be distinguished (Kozina, Małkus, 2023):

- substantial acceleration of these processes, especially pre-negotiation analysis (specifying, for example, bargaining power of parties resulting from the importance or uniqueness of each party in the process of creating or restoring value in reverse logistic, also obtaining recommendations),
- significant increase of the scope of such analysis in a wider negotiating environment (e.g. considering the influence of interests of other units cooperating with negotiating parties),
- searching for trusted negotiation partners, shaping and maintaining positive relationships with them,
- adopting a broader perspective when looking for possible alternative solutions (e.g. considering other potential partners of the same type, avoiding excessive dependence on the entity with which one is negotiating),
- increased flexibility of performance, particularly when searching for options for solutions,
- looking for new strategies and negotiation techniques aimed at finding a balance between cooperation and competition,
- enriching the tools of multiparty negotiation, more and more dominant in contemporary socio-economic life,
- full acceptance of the multicultural nature of the negotiating environment and its creative use,
- particular attention is related to compliance with limitations resulting from law on environmental protection, treatment of special types of goods, dangerous goods waste and recyclable materials as well as with requirements of permits for transport, storage, securing, etc. resulting from these regulations,
- paying much more attention to information security,
- using modern systems of supporting negotiations via the Internet.

Listed features of negotiations with providers in the area of reverse logistics are only examples, but these are treated as most important when preparing terms cooperation.

It should be added that negotiations carried out in the reverse logistics process are more detailed than in the traditional logistics process, in which they are direct in nature (Jeszka, 2011). Moreover, negotiations with participants in the business environment in the scope of the implementation of flows are much more difficult in reverse logistics than in traditional logistics (Starostka-Patyk, 2016). The bargaining power of the partners in these negotiations is of significant importance in this case (Sheu, Gao, 2014).

When considering parties to the discussed negotiations, these can be distinguished on the basis of previously mentioned types of activities in the area of reverse logistics,

relationships between reverse logistics and the flow of goods in the manufacturing process, as well as the ways of specialization of service providers. The following types of participants can be distinguished:

- product suppliers (manufacturers, trading companies but also firms rendering services),
- recipients (using the delivered goods and services in the further production or distribution),
- end users of products and recipients of services,
- units disassembling worn, damaged, spoiled products,
- units recycling materials for reuse,
- units disposing waste,
- specialized service providers authorized to collect and transfer waste and recyclable materials to the places of their further use.

It should be added, that in practice, there may be enterprises combining the above-mentioned specializations, in accordance with legal restrictions related to the handling of waste and recyclable materials.

In order to describe and analyze negotiation processes conducted within reverse logistics the following key aspects of the description of negotiations can be distinguished, i.e. as a process, methods of conflict management and reaching an agreement, mutual dependence of the parties and processes of: decision making, communication, mutual exchange and value creation (Kozina, 2018).

In the literature on the subject, both in the field of reverse logistics cooperation and negotiations the issue of negotiation strategy is rather rarely considered. It is included for example in (Jayaraman, Guide, Srivastava, 1999; Jayaraman, Patterson, Rolland, 2003; *Negocjacje…,* 2003; Linton, Jayaraman, 2005; Lewicki, Barry, Saunders, 2018) and in literature review conducted in this field (Rogers, Tibben-Lembke, 1999). A common feature of most studies is the focus on bilateral negotiations without sufficient consideration of the influence of other participants on the attitudes of the negotiating parties. Also, insufficient attention is paid to the conditions of negotiations in which more partners participate simultaneously. One of the few examples of a study that considers the company's connections with its supplier and recipient as well as the conditions affecting negotiations between the company in question and each of its partners is (Tombido, Louw, Van Eeden, 2018; Heunis et al., 2024; Anwar, Ekawati, Ramadian 2024). Therefore, an original, author's approach to the discussed strategies is presented in the article, based on classic works, discussing negotiation strategies in general, such as (Levitt, 1980; Lindgreen, Hingley, Grant, Morgan, 2012; Rogers, Tibben-Lembke, 1999; Dowlatshahi, 2000; Johnson, 1998; El Korchi, Milet, 2011; Huscroft, Hazen, Hall, Skipper, Hann, 2013; Senthil, Sridharan, 2014).

3. METHODOLOGY

Research results planned to be presented in the article are mostly of conceptual nature. Such assumption of led to decision to use desk research as the main method to conduct such research. This method is considered the basic one to obtain from available bibliographic sources a wide range of main information regarding the specificity of reverse logistics services market, types of service providers, as well as conditions for undertaking cooperation with service providers in this market.

The application of desk research is supported by the analysis of review studies, as well as case studies in which generalizations concerning attitudes and policies to negotiations are presented. Also studies on detailed experiences when conducting cooperation with service providers in the area of reverse logistics as well as the impact of cooperation conditions on value recovery process in reverse logistics are taken into consideration.

The preparation of the content is also supported by authors' individual experience in the area of designing reverse logistics management systems, as well as negotiating and preparing the terms of cooperation with units specializing in provision of services related to handling of used products, goods with expired date of use, recyclable materials, as well as waste. In preparing the article, authors' experience and research results on conflicts in logistics systems, both within an individual enterprise and between enterprises cooperating in supply chains, were also considered.

Based on the information collected during the content analysis of bibliographic sources, generalizations were made, and proposals were presented for types of negotiation strategies that could be useful in negotiating the terms of cooperation with reverse logistics service providers.

Presented approach to use research methods has limitations, which, however may include limited timeliness of data and information in dynamically changing market conditions, fragmentation and incompleteness of data and information, making it difficult to analyze market situation and identify key factors influencing the effectiveness of negotiations, limited reliability of data and information sources, lack of cultural context, as well as the risk of overinterpretation of data.

4. RESULTS OF RESEARCH

Beginning to consider the concept of negotiation strategy it can be described as a "general plan aimed at achieving goals and a sequence of events leading to their implementation" (Lewicki, Barry, Saunders, 2018) or "a planned sequence of actions defining the approach to negotiations" (*Negocjacje…,* 2003). It is also "a certain set of means and methods leading to the achievement of planned goals" (Kałążna-Drewińska 2006). It should also be assumed that "the negotiation strategy should, in most cases, be consistent with the strategy of the organization for which the negotiators work" (Kowalczyk, 2001).

The above-mentioned general approach to understanding negotiation strategy shows, that such concept can be defined in detail as a program specifying the key goals and principles of implementing the negotiation process as well as assumptions and expectations as to its course. It includes a scenario of expected events, expected actions and behaviors of negotiation participants. It also identifies the conditions (possibilities and limitations) of conducting them, resulting from the influence of their parties, the immediate environment, and the external environment (Kozina, 2018).

Therefore, the negotiation strategy determines the course of action during negotiations, in the form of synthetic rules (indications) for conducting them. It is difficult to clearly define it, it is situational in nature, i.e., it depends on the assumptions and conditions of specific negotiations, and it is also necessary to precisely distinguish between the strategic and operational aspects of action. Unless this is done from the perspective of future relations with the other party or in the context of long-term contracts under which partial transactions are negotiated. By definition, negotiations are closed undertakings (projects).

Creating a negotiation strategy includes the following activities:
1) synthesis of previous arrangements (assumptions and conditions of negotiations),
2) analysis of the possibilities of selecting a strategy (among model solutions),
3) choice of negotiation strategy.

These activities are the culmination of the negotiation planning process, because the right strategy is a means to achieve the assumed goals, the simpler it is, the better it is. Complicated strategies fail after a few moves because the other side has not read our script and has a different plan (Kennedy, 1998). Effective formulation of goals and appropriate recognition of the negotiation situation may be accompanied by an ineffective strategy and vice versa (Schoonmaker, 1989).

Depending on the real possibilities of "programming" considered negotiations, the strategy discussed may be:
- detailed plan for their implementation, constituting a synthesis of planning arrangements, or
- rough scenario, containing only the most important statements, or
- only a general view of the negotiations (sketch), suggesting how they should be conducted.

The negotiation strategy under consideration may therefore be detailed or generalized.

Taking into consideration two-party negotiation strategies within reverse logistics in the literature, there are usually two opposing types of strategies distinguished, adequate to types of negotiations, depending on the way they are perceived, especially the attitude towards the partner, referred to as strategies (Thomas, Eastman, Shepherd, Denton, 2018; Walton, McKersie, 1965; Schoonmaker, 1989; Kennedy 1989; Kamiński, 2003; Lewicki, Barry, Saunders, 2018):
- cooperative – integrative, also called collaboration, based on mutual benefits (win-win), joint search for solutions, bargaining based on interests, etc.,
- competitive – distributive, also referred to as rivalry, individual search for solutions (win-lose), bargaining based on positions, etc.

When considering participants in reverse logistics, representing partially common but also other, individual, separate interest's negotiation strategies conducted in such a cooperation are the result of searching for a balance between cooperation and competition. As it was noted in (Ury, 1995), the growing dynamics and scope of changes in the environment cause the differentiation of negotiation cases, making their description and analysis difficult. Considering the conditions of cooperation with providers of different types of service within reverse logistics, operating on the basis of appropriate licenses, legal authorizations to deal with specified types of goods, bargaining power of such providers may result with difficulties in achieving a balance between cooperation and competition. In such conditions negotiation strategy between provider and client may be more competitive in nature. It should be emphasized that the path from such competition to cooperation is also negotiation. The two basic types of negotiation strategies are therefore relative in nature.

Based on the two general types of bilateral negotiations presented above and considering the possibility of simultaneous cooperation and competition (coopetition) between partners, third type of strategy has been proposed (Brandenburger, Nalebuff, 1997). All three considered types of strategies for bilateral negotiations are compared in Table 1.

Table 1. The description of three types of two-party negotiations strategy

Features	Types of strategies		
	Competitive	Cooperative	Coopetitive
Participants	Opponents (adversaries).	Partners (or associates).	Opponents and partners (simultaneously)
Objectives and interests	conflicting (divergent, incompatible), priorities, mutually exclusive.	not conflictual (common, compatible), or different (other) with a different hierarchy, mutually dependent and aimed at understanding.	diverse, defined at a level of balance acceptable to all parties.
Resources	limited (fixed), without possibility to divide specific resources.	mostly unlimited (variable), possibility of increasing them by searching for new, creative solutions.	limited to division, but unlimited to increase.
Relationships	lack of trust in the other party, short-lived; trust and long-term, positive relationships are not important.	mutual trust of parties especially to competencies and goodwill of partner, the need and searching for long-term relations based on mutual understanding.	professional, neutral, substantive and not overly emotional.
Motives	striving to achieve one's own benefits at the expense of the partner, demanding benefits, position orientation.	belief that competencies and goodwill of both partners provide them with mutual benefits, aiming at maximizing benefits of both parties, business orientation.	striving to achieve the greatest possible benefits by all parties.
Effects	win/lose (gain/loss), satisfaction of one of parties, implementation does not depend on the goodwill of the other party, agreement is easy to reach, client (principal) strives to use the competences and rights of provider.	win/win (benefit/benefit), satisfaction of both parties, the condition for implementing the solution is mutual agreement of parties, agreement is difficult to reach.	mutual win by seeking additional benefits, the condition for implementation is to achieve the agreed level of effectiveness, perseverance and consistency in striving for an agreement.

Table 1 (cont.). The description of three types of two-party negotiations strategy

Features	Types of strategies		
	Competitive	Cooperative	Coopetitive
Proces	searching for solutions through mutual concessions, within the scope of negotiations, starting from attempts to achieve maximum goals, through taking subsequent positions, formulating offers ensuring benefits, supporting them with arguments, reaching an agreement somewhere in the middle of this area, but not exceeding the minimum requirements.	creative problem solving through identification of interests of parties (informing about their needs), structuring the problem according to the interests of the parties, generating options for solving problems, selection of criteria for their assessment, formulating variants of the agreement, reaching an agreement by selecting a solution and improving it.	identification and ordering of problems according to priorities (criteria) of effectiveness, importance, difficulty and possibly urgency, searching for creative solutions to key, important problems, mutual concessions when solving marginal and less important problems.
Techniques	confrontational and manipulative, offensive and routine actions, based on relative strength and the pursuit of advantage.	Integrative (cooperative), constructive and creative activities, based on trust and exchange of information.	diverse, both routine and creative, efficiency-oriented, and adequate to the above-defined features.

Source: own elaboration.

It is important to emphasize that focusing on only one separate type of strategy may not prove to be an appropriate approach. It is generally recommended to use a cooperation strategy, but an alternative to use competitive strategy should be prepared in case the initial assumptions turn out to be incorrect, i.e., the partner refuses to cooperate and strives for confrontation, feeling its bargaining power resulting from unique assets or legal authorizations. The coopetitive strategy may also prove to be the right one in specific conditions, e.g., between the client (principal) and service providers (when each party is aware of the benefits gained through cooperation), also between providers competing for a larger share of services rendered in the next period of cooperation.

Each of the three types of bilateral negotiation strategies presented in Table 1 can be used in reverse logistics negotiations, as shown in Table 2.

Negotiations can be carried out not only with one partner (bilateral negotiations), as it stated in previous part of article, but simultaneously with more of them (multilateral negotiations). In the current operating conditions of organizations, such negotiations occur more and more often in the field of various, complex, and dynamic projects, such as concluding alliances, implementing joint projects (e.g., development, innovation, etc.), outsourcing, creating network or virtual structures, as well as in reverse logistics.

Up to now, conducted research did not develop effective methodological tools for the implementation of the considered negotiations, adequate to their specificity, and especially their strategy. It is not difficult to find advice on how to conduct negotiations involving two parties, but such simple negotiations in the real world are rare (Watkins, 2005). Modifications to the standard negotiation process or tools for solving selected problems

are usually proposed, mainly in the context of international relations (Zartman, 1994; Dupont, 1994; Crump, 2003).

Table 2. Two-party strategies of negotiations within reverse logistics

Type of strategy	Possibilities of implementation
Competitive	may be useful to resolve conflicts, related to various aspects of cooperation, e.g. necessary changes of procedures used by client (principal) related to preparation of waste and recyclable materials to be transferred to the service provider, division of benefits between parties (resulting from improvements of cooperation), reaction to changes of law regulations concerning treatment of specified types of waste or recyclable materials, etc.; such strategy may also be useful when applying for cooperation, to enter into a new contract with the client.
Cooperative	the most appropriate strategy to take full advantage of benefits of cooperation in reverse logistics; the basis for effective, usually long-term cooperation; used especially when creating terms of cooperation as well as when adapting to changes of conditions of cooperation, because potential participants usually tend to avoid competition with others; ccooperation is necessary to agree its terms in such a way as to provide the expected benefits to all cooperating companies in terms of the scope, time, place, etc.
Coopetitive	participants may use such a mixed strategy, while cooperating harmoniously on a daily basis; in accordance with a positively understood routines, adaptation of such routines to changes e.g. of law regulations without unexpected disruptions in cooperation; partners know exactly what they can expect from themselves; parties are aware of their strategies, these strategies as well as strategy of entire reverse logistics are agreed and are well known to all parties; may be used e.g. in conditions of outsourcing activities to many service providers when the share in the total number of orders depends on the degree of meeting the quality requirements of the client in the earlier period.

Source: own elaboration.

As far as the definition and features of multiparty negotiations are concerned, the three fundamental criteria to classify their strategies may be used. Each of the criteria allows distinguishing two, thus all of them six, i.e., three pairs of basic (pure, single-dimensional) negotiation strategies are described below (Kozina, 2007):

- including general attitude towards negotiations (parties, goals, mutual relations, and context), which is reflected in traditional concept of integrative versus distributive bargaining, two basic strategies may be distinguished: cooperative (negotiator focused on finding solutions which satisfy the interests of all parties, to reach common ground, and to look for potential allies) and competitive (negotiator searches for solutions which satisfy only his interests and fights against his opponents),
- considering the negotiator's bargaining power, two pure strategies can be specified: superiority (supremacy – when the position of a negotiator against others is relatively strong, negotiator dominates over others and has many possibilities) and inferiority (subordination – reflecting a weak negotiator's position, subordinated to other parties, and having limited opportunities, which reflects the actual negotiator's

possibility for controlling the negotiation process and scope of determining the activities of the other parties),

- according to the possible ways of performing negotiations in relation to other parties within a group, two basic strategies can be pointed out: individual (the negotiator acts solely on his own but impacting indirectly his partners) and common (the negotiator is involved in teamwork, directly and substantially influencing group structure and processes).

The pure negotiation strategies listed above are not sufficient to reflect the complexity of multiparty negotiations. Therefore, it is necessary to combine the three classification criteria, i.e., look at those strategies from three-dimensional perspective, which leads to elaborating eight potential, resultant strategic options – see Table 3.

Table 3. Three-dimensional classification of multi-party negotiations

Strategies (below: pure, left: resultant)		Individual	Collective
Cooperative	Superiority	Entrepreneurial [Creator]	Integration (forming coalition) [Integrator]
	Inferiority	Encouragement demonstration [Supporter]	Accession to coalition [Nexus]
Competitive	Superiority	Fight [Terminator]	Disintegration (destroying coalition) [Saboteur]
	Inferiority	Opposition manifesto [Don Quixote]	Accession to adverse coalition [Oppositionist]

Source: own elaboration.

To enable the selection of an appropriate strategy in the case of negotiations between participants of cooperation within reverse logistics, it is necessary to determine the conditions of their usefulness – these are presented in Table 4.

Table 4. Conditions of usefulness of multilateral negotiation strategies within reverse logistics

Strategy	Conditions of use in the reverse logistics
Entrepreneurial	an agreement with others within reverse logistics, concluded on one's own terms, even though it is not necessary for immediate purposes; this significantly increases the benefits and/or strengthens the potential of resources or weakens potential competitors; e.g., creation of an "empire" by company authorized to handle waste or materials for recycling, when creating a network with other units operating in the area of waste disposal and recycling.
Encouragement demonstration	in a case of firm not attractive for partners, the fact of "media" support is the only source of potential benefits, i.e. at least improving image, obtaining a possible award, or achieving benefits in the future, in reverse logistics there is little opportunity to use such type of strategy, usually image of partner has to be confirmed by authorizations, licenses, certificates, recommendations related to treatment of certain types of goods, cooperation with an unauthorized company may result in legal consequences.

Table 4 (cont.). Conditions of usefulness of multilateral negotiation strategies within reverse logistics

Strategy	Conditions of use in the reverse logistics
Fight	best method to dominate other companies by imposing own conditions, but this does not entail costs that significantly exceed the possible benefits, an example can be the use of unique legal authorizations of partner to impose its expectations on other parties, when resigning from cooperation and changing this partner to another one is difficult or impossible.
Opposition manifesto	verbal opposition to others is the only way to gain any possible benefits, usually in the future, used in the case of a change in the situation, e.g., as a result of favorable external conditions, e.g. blocking the implementation of its goals – considered unfounded, irrelevant, wicked, etc. - by party to cooperation with greater bargaining power, in reverse logistics, it is easy to use, especially for companies authorized to handle specific types of waste and secondary raw materials on the market.
Integration (forming coalition)	seeking high-quality agreements with other partners by striving to achieve mutual goals as much as possible, solving problems together, achieving objectives efficiently, leading to the best possible results; useful strategy, especially when each party to negotiation has significant potential, strategy that is particularly useful in the context of creating a network of cooperation between companies that transport, store and process waste and secondary raw materials, it can also be used between these partners and clients in reverse logistics.
Accession to coalition	applied particularly when considered organization strives to cooperation with other firm, which is the best, and sometimes the only, way to improve one's own weak bargaining position in order to fully or at least partially achieve high efficiency of the entire chain (treated as coalition); this can contribute remarkably to the achievement of common organizational goals, also useful particularly for negotiations between companies transporting, storing and processing waste and secondary raw materials.
Disintegration (destroying coalition)	competing with partners in order to prevent or limit the implementation of their common, but for us opposing, goals; it is treated as the most advantageous way to achieve one's own goals, e.g. breaking up by manufacturer previously established but currently ineffective coalition with subcontractor, preventing the creation of an alliance between such subcontractor and provider of logistics service that could weaken the position of manufacturer in the likely unfavorable external conditions, in reverse logistics, where there is a need to have permissions to handle certain types of goods (especially waste and secondary raw materials) and where errors in operation may result in negative legal consequences, such a strategy should be avoided.
Accession to adverse coalition	cooperation (e.g., of manufacturer with subcontractor) as the best, and sometimes the only, way to improve own position of manufacturer for the full or at least partial implementation of goals that are common for coalition of manufacturer and subcontractor as well as to prevent the subcontractor from joining another coalition and thus prevent the implementation of the goals of such a coalition, cooperation in reverse logistics may require the integration of activities of customer and logistics service provider, as well as close cooperation with the partner processing waste or secondary raw materials, such integration reduces the risk of opportunism of the parties and changing chain/network partners.

Source: own elaboration.

Considering types of strategies presented in Table 4, the integration strategy based on the construction of a coalition should be considered as the most preferred, i.e. recommended for use. This strategy potentially provides the greatest benefits to all partners as a result of their cooperation in searching for the best solutions. However, taking into account the objective difficulties in implementation of the strategy considered, determined by the complexity of the negotiations under consideration and the often limited possibilities of action, the strategy of accession to a coalition should be considered more realistic, provided, of course, that such a coalition has been concluded. On the other hand, in order to prevent the creation of undesirable enterprise agreements between reverse logistics, which reduce the strength of connections between partners in the chain under consideration, strategies of disintegration and accession to another coalition may also prove to be useful from time to time.

5. DISCUSSION

Presented typology of negotiation strategies, that can be used to establish cooperation or during the adaptation of existing cooperation with partners in the area of reverse logistics is a proposal of the authors of this article. It is a response to the insufficient interest in this issue highlighted in the chapter on the literature review. This issue is becoming increasingly important with the growing interest in cooperation with service providers in reverse logistics, the focus on sustainable development and the associated greater intensity of changes in the operating conditions in the environment of enterprises.

The main advantages of the suggested concept of negotiation strategies within reverse logistics cooperation are as follows:
- it is conducive to effective cooperation between companies,
- moreover, supports the management of relations among them,
- what is more, it influences the effective shaping and maintenance of partnership relations between them,
- stimulates the search for effective solutions to problems arising in cooperation,
- facilitates the resolution of potential and real conflicts within cooperation,
- helps to reach compromises and consensuses while resolving these conflicts,
- supports the search for creative solutions to improve cooperation,
- leads to the conclusion of effective contracts between partners,
- in the end, it increases the efficiency of cooperating parties, as well as entire reverse logistics' performance.

On the other hand, the following disadvantages of the suggested concept may be pointed out:
- its use can sometimes be too laborious,
- it may leave aside the scope of considerations of secondary but important conflict goals for individual parties to the negotiations,
- the choice of proposed strategies may be limited by changes in legal regulations related to the pursuit of the principles of sustainable development, including the implementation of the assumptions of green supply chains,
- companies having strong bargaining power e.g. based on the uniqueness of their competences (confirmed by licenses, certificates) may dominate over other cooperating parties,

- changes in legal regulations related e.g. to management of waste, secondary raw materials, and reduction of carbon footprint may result in changes in strategy during the renegotiation of operating conditions in order to adapt to new conditions.
- sometimes it leads to the conclusion of the so-called sick compromises that do not satisfy any of the participants.

Since the presented proposal of typology of strategies is preliminary in nature, it will be improved during further research in order to reduce the disadvantages listed above.

6. CONCLUSIONS

As it was stated, the proposal of concept to describe negotiation strategies within reverse logistics cooperation presented in the paper is a preliminary approach to the issues under consideration, since they are relatively new, not fully recognized in theory and research, as well as in economic practice. Therefore, authors will strive to enrich and broaden presented concept, mainly by searching for more precise characteristics of the considered features of the negotiations under consideration. It is also planned to conduct comparative empirical research in order to verify the usefulness of this concept.

In addition, it is planned to expand the context of considerations, i.e. to create a broader concept of the conditions of negotiations within reverse logistics cooperation in the current economic reality by proposing the principles of their conduct and thus creating a specific normative model of such negotiations.

Another interesting direction for further research may be to adapt the presented negotiation strategy proposals to the types of relationships between cooperators in reverse logistics. It is necessary to take into account, for example, the expectations of the client and the service provider regarding the effects of cooperation resulting with decisions related to dependence on partner, preferred period of cooperation, partnership, the need for integration, including the adaptation of procedures, tools, and also, for example, the involvement of cooperating parties in the supply chain. Depending on the expectations regarding the organization and effects of cooperation, the usefulness of individual, proposed types of strategies may also change.

Conflicts of Interest: Authors declare that there is no conflict of interest regarding the use of other authors' copyrights.
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REFERENCES

Agrawal, S., Singh, R. K., Murtaza, Q. (2015). A literature review and perspectives in reverse logistics. *Resources. Conservation and Recycling*, Vol. 97, pp. 76–92. https://doi.org/10.1016/j.resconrec.2015.02.009

Anwar, S, Ekawati, I., Ramadian, D. (2024). Optimizing negotiation process of buyer-supplier collaboration in the gambier supply chain. *IOP Conf. Series: Earth and Environmental Science*, Vol. 1358. https://doi.org/10.1088/1755-1315/1358/1/012046

Brandenburger, A., Nalebuff, B. J. (1997). *Co-Opetition: a revolution mindset that combines competition and cooperation. The game theory strategy that's changing the game of business*. Doubleday.

Christopher, M. (2000). *Logistyka i zarządzanie łańcuchem dostaw. Strategie obniżki kosztów i poprawy poziomu usług*. Polskie Centrum Doradztwa Logistycznego.

Crump, L. (2003). Multiparty negotiation and the management of complexity. *International Negotiation*, Vol. 8, Issue 1, pp. 189–195.

Dapiran, G. P., Kam, B. H. (2017). Value creation and appropriation in product returns management. *The International Journal of Logistics Management,* Vol. 28, No. 3, pp. 821–840. https://doi.org/10.1108/IJLM-11-2015-0199

Dowlatshahi, S. (2000). Developing theory of reverse logistics. *Interfaces*, Vol. 30, pp. 143––155. https://doi.org/10.1287/inte.30.3.143.11670

Dowlatshahi, S. (2010). The role of transportation in the design and implementation of reverse logistics systems. *International Journal of Production Research,* Vol. 48, No. 14, pp. 4199–4215. https://doi.org/10.1080/00207540902998356

Dupont, C. (1994). Coalition theory. Using power to build cooperation. In W. I. Zartman (Ed.), *International Multilateral Negotiation. Approaches to the Management of Complexity* (pp. 325–346). Jossey-Bass Publishers.

El Korchi, A., Milet, D. (2011). Designing a sustainable reverse logistics channel: the 18 generic structures framework. *Journal of Cleaner Production*, Vol. 19, Issues 6–7, pp. 588–597, https://doi.org/10.1016/j.jclepro.2010.11.013

Heunis, H., Pulles, N. J., Giebels, E., Kollöffel, B., Sigurdardottir, A. G. (2024), Strategic adaptability negotiation training in purchasing and supply management: A multi-method instructional approach, *Journal of Purchasing and Supply Management*, in press, corrected proof. https://doi.org/10.1016/j.pursup.2024.100968

Huscroft, J. R., Hazen, B. T., Hall, D. J., Skipper, J. J., Hann, J. B. (2013). Reverse logistics: past research, current management issues and future directions. *The International Journal of Logistics Management*, Vol. 24, No. 3, pp. 304–327. https://doi.org/10.1108/IJLM-04-2012-0024

Jayaraman, V., Guide Jr, V. D. R., Srivastava, R. (1999). A closed-loop logistics model for remanufacturing. *Journal of Operational Research Society*, Vol. 50, No. 5, pp. 497–508. https://doi.org/10.2307/3009998

Jayaraman, V., Luo, Y. (2007). Creating competitive advantages through new value creation: a reverse logistics perspective. *Academy of Management Perspectives*, Vol. 21, No. 2, pp. 56–73. http://dx.doi.org/10.5465/AMP.2007.25356512

Jayaraman, V., Patterson, R. A., Rolland, E. (2003). The design of reverse distribution networks: Model and solution procedures. *European Journal of Operational Research*, Vol. 150, pp. 128–149. https://doi.org/10.1016/S0377-2217(02)00497-6

Jeszka, A. M. (2011). Miejsce logistyki zwrotnej w koncepcji łańcucha dostaw. *Gospodarka Materiałowa i Logistyka,* nr 1, pp. 18–23. Retrieved from: https://www.researchgate.net/publication/337243562_Miejsce_logistyki_zwrotnej_w_koncepcji_lancucha_dostaw, 30.11.2024.

Johnson, P. F. (1998). Managing value in reverse logistics systems. *Transportation Research Part E: Logistics and Transportation Review*, Vol. 34, Issue 3, pp. 217–227. https://doi.org/10.1016/S1366-5545(98)00016-7

Kałążna-Drewińska, U. (2006). *Negocjacje w biznesie. Kluczowe problemy*. Wydawnictwo Akademii Ekonomicznej.

Kamiński, J. (2003). *Negocjowanie. Techniki rozwiązywania konfliktów*. Poltext.

Kennedy, G. (1998). *Negocjator.* Studio EMKA.

Kowalczyk, E. (2001). *Psychospołeczne uwarunkowania negocjacji gospodarczych*. Wydawnictwo Akademii Ekonomicznej w Poznaniu.

Kozina, A. Małkus, T. (2023). The features of negotiations within reverse logistics cooperation. *Acta logistica – International Scientific Journal about Logistics*, Vol. 10, No. 1, pp. 111–119.

Kozina, A. (2007). Strategie negocjacji wielostronnych. In A. Potocki (Ed.), *Mechanizmy i obszary przeobrażeń w organizacjach* (pp. 125–133), Difin.

Kozina, A. (2018). *Zasady negocjacji*. Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

Lax, D. A., Sebenius, J. K. (1986). *The manager as negotiator. Bargaining for cooperation and competitive gain*. The Free Press.

Levitt, T. (1980). Marketing success through differentiation – of anything. *Harvard Business Review*, Vol. 58, No. 1, pp. 83–91, Retrieved from: https://www.researchgate.net/publication/246767808_Marketing_Success_Through_Differentiation-Of_Anything, 20.11.2024.

Lewicki, R. J., Barry, B., Saunders, D. M. (2018). *Zasady negocjacji*. Dom Wydawniczy Rebis.

Lindgreen, A., Hingley, M. K., Grant, D. B. Morgan, R. E. (2012). Value in business and industrial marketing: past, present, and future. *Industrial Marketing Management*, Vol. 41, No. 1, pp. 207–214. https://doi.org/10.1016/j.indmarman.2011.11.025

Linton, J. D., Jayaraman, V. (2005). A framework for identifying differences and similarities in the managerial competencies associated with different modes of product life extension. *International Journal of Production Research*, Vol. 43, No. 9, pp. 1807–1829. https://doi.org/10.1080/13528160512331326440

Małkus, T. (2020). *Assumptions for the regulation of operations in reverse logistics*. "Proceedings of 9-th International Carpathian Logistics Congress CLC 2019", pp. 58–65.

Małkus, T., Kozina A. (2022), The features of negotiations within reverse logistics cooperation, *Acta Logistica*, Vol. 10, Issue 1, pp. 111–119. https://doi.org/10.22306/al.v10i1.364

Negocjacje. Harvard Business Essentials (2003). MT Biznes Ltd.

Rachih, H., Mhada, F. Z., Chiheb R. (2019). Meta-heuritsicts for reverse logistics: A literature review and perspectives. *Computers & Industrial Engineering*, Vol. 127, pp. 45–62, 2019. https://doi.org/10.1016/j.cie.2018.11.058

Rogers D. S., Tibben-Lembke, R. S. (1999). *Going backwards: reverse logistics trends and practices*. Reverse Logistics Executive Council.

Schelling, T. C. (1960). *The Strategy of Conflict*. Harvard University Press.

Schoonmaker, A. N. (1989). *Negotiate to Win. Gaining the Psychological End*. Prentice Hall.

Senthil, S., Sridharan, R. (2014). Reverse logistics: a review of literature. *International Journal of Research in Engineering and Technology*, Vol. 3, No. 11, pp. 140–144. http://dx.doi.org/10.15623/ijret.2014.0323031

Sheu, J-B, Gao, X-Q. (2014). *Alliance or No Alliance – Bargaining Power in Competing Reverse Supply Chains. European Journal of Operational Research,* Vol. 233, pp. 313––325. http://dx.doi.org/10.1016/j.ejor.2013.09.021

Starostka-Patyk M. (2016). *Logistyka zwrotna produktów niepełnowartościowych w zarządzaniu przedsiębiorstwami produkcyjnymi*. PWE.

Thomas, S., Eastman, J., Shepherd, C. D., Denton, L. T. (2018). A comparative assessment of win-win and win-lose negotiation strategy use on reverse logistics relational outcomes. *The International Journal of Logistics Management*, Vol. 29, Issue 1, pp. 191–215. http://dx.doi.org/10.1108/IJLM-10-2016-0238

Tombido, L. L., Louw, L., Van Eeden, J. (2018). A systematic review of 3PLS' entry into reverse logistics. *South African Journal of Industrial Engineering*, Vol. 29, No. 3, pp. 235–260. https://doi.org/10.7166/29-3-2062

Ury, W. (1995). *Odchodząc od NIE. Negocjowanie od konfrontacji do kooperacji*. Państwowe Wydawnictwo Ekonomiczne.

Walton, R. E., McKersie, R. B. (1965). *A behavioral theory of labor negotiations: an analysis of a social interaction system.* McGraw-Hill Book Company.

Watkins, M. (2005). *Sztuka negocjacji w biznesie. Innowacyjne podejście prowadzące do przełomu*. Wydawnictwo Helion.

Zartman, W. I. (1994). Two's company and more's a crowd. The complexity of multilateral negotiation. In W. I. Zartman (Ed.), *International Multilateral Negotiation. Approaches to the Management of Complexity* (pp. 7–20). Jossey-Bass Publishers.

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THE ROLE OF INTERNAL COMMUNICATION IN ACTIVATING KNOWLEDGE MANAGEMENT PROCESSES: A STUDY OF THE OPINIONS OF A SAMPLE OF PROFESSORS AT ALGERIAN UNIVERSITIES

The study aimed to investigate the role of internal communication in enhancing knowledge management processes from the perspective of university professors at Algerian universities. An electronic questionnaire was distributed to university professors across various Algerian universities via social media and email, resulting in 115 analyzable forms. Using the SmartPLS V4 program, structural equation modeling was used to examine these shapes. The analysis yielded several key findings, most notably the presence of a positive and moderate role of internal communication across all knowledge management procedures, such as the production, archiving, sharing, and application of knowledge. The study also recommended delving deeper into the importance of digital transformation and its mechanisms for activating internal communications and their significance in knowledge management processes across different contexts.

Keywords: internal communication, knowledge management processes, knowledge creation, knowledge storage, knowledge sharing; knowledge application.

1. INTRODUCTION

Given the significant advancements in information and communication technology we are experiencing today, along with the rise of artificial intelligence, which has become a central topic of discussion, there has been a substantial impact on the accessibility of information and knowledge for individuals. While knowledge used to change at a rate

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measured in years, it now evolves within minutes and seconds. This rapid flow underscores the impact of multiple forms of communication. Communication is considered one of the most enduring social processes because individuals are inherently social beings who need to belong to a group with which they can interact. Through these interactions, individuals can exchange knowledge and experiences. In his study on the importance of communication in modernization and technological change, Ithiel de Sola Pool argued that modernization is essentially the process of acquiring new perceptions or mental images, such as directed perception or the perception of development potential. He also noted that public communication media will play a significant role in imparting these new perceptions to people (Ithiel de sola, 1980). Many studies have indicated that approximately 60% of problems in organizations stem from ineffective and inaccurate communications (Holá, 2012). Therefore, communication is a critical element for the sustainability of organizations of all types. This is because it helps gather, analyze, and organize information from the external environment and transforms processed messages into the internal environment. Amid these challenges, organizations can build a positive reputation both internally and externally (Nagachevska, Dzhereleiko, Kushk, 2023). Given the success achieved by Japanese and American organizations, particularly in the production sector, many countries have attempted to apply knowledge management in academic institutions. This is because universities are inherently knowledge-generating and producing entities with an infrastructure conducive to communication processes. All members of these institutions possess a level of education that facilitates the activation of knowledge management processes.

1.1. Study Importance

The significance of the subject addressed by the current study is highlighted by researchers' and scholars' interest in delving into the essence of the study variables and exploring their relationships from various perspectives. Internal communication is considered one of the most critical and fertile topics for research due to its importance in modern organizations. It plays a vital role in enhancing trust between employees and management and is a crucial element in the processes of transferring, exchanging, and sharing knowledge. It is crucial to research how internal communication and knowledge management procedures interact. In today's knowledge economy, which emphasizes valuing and leveraging knowledge to create value.

1.2. Study Objectives

This study aims to underscore the impact that internal communication has in activating knowledge management processes. Understanding the importance of internal communication that occurs between individuals will contribute to activating the four knowledge management processes considered in this study. Furthermore, it will assist university professors in making decisions regarding their knowledge, particularly tacit knowledge.

1.3. Study Problem

The current study problem revolves around analyzing the role of internal communication in activating the four processes of knowledge management (application, sharing, storage, and creation) from the perspective of university professors. The hypothetical model of the study can be illustrated through Figure 1.
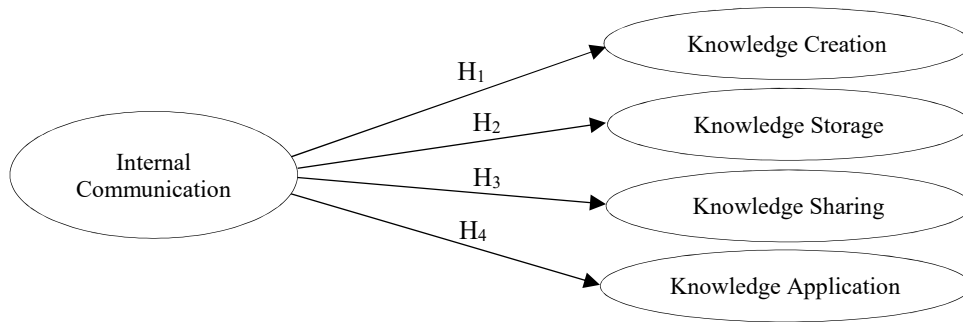
Figure 1. Conceptual Model

Source: Prepared by the researches based on previous studies.

The study model comprises one independent variable, which is internal communication, and four dependent variables, which are the knowledge management processes as illustrated in the figure. Accordingly, the main research questions of the study can be outlined as follows:

- Does internal communication play a role in activating knowledge creation in Algerian universities?
- Does internal communication play a role in activating knowledge storage in Algerian universities?
- Does internal communication play a role in activating knowledge sharing and distribution in Algerian universities?

Does internal communication play a role in activating the application and utilization of knowledge in Algerian universities?

2. LITERATURE REVIEW

2.1. Knowledge Management

Today, the unparalleled focus on knowledge arises because it serves as the source and driver of revolution. The transition from emphasizing humans during the agricultural era to focusing on machinery during the industrial era has now led to the knowledge economy era, which places primary importance on knowledge. In this regard, there has been increased attention to knowledge in recent years, as we notice that institutions of all kinds are striving to attract individuals with knowledge and expertise. They provide these individuals with comfort to ensure their stability, thereby encouraging them to work on innovative ideas.

Knowledge is described as

> an evolving mix of experience, values, contextual information, and expert insight that provides a framework for evaluating and integrating new experiences and information. Often, knowledge is embedded within organizations in the form of documents or repositories and in organizational routines, practices, etc. (Murray, 2007).

Knowledge is the primary driver of innovation and the renewal and updating of institutions through the development of their members' capacities (Abu saleh, Umana,

2009). Gamascia states that there is no single type of knowledge but rather a multitude of knowledge types (Ragaa, 2021). Here, we can mention the main types of knowledge introduced by Michael Polanyi, which include explicit and tacit knowledge. Following him, (Nonaka, 2007) elaborated further, providing explanations for these two types. Explicit knowledge refers to formal knowledge that can be obtained in the form of books or conveyed through conferences and meetings; it is characterized by ease of transfer and exchange among individuals and is cost-effective. In contrast, tacit knowledge is acquired through personal experiences and is non-verbal, challenging to formalize, can be learned through practice and application, is expensive to acquire, and is conveyed through conversations or interactions among individuals. Tacit knowledge gives an institution its unique character by enhancing its ability to create knowledge, enabling it to achieve exceptional performance and strengthen its competitive advantage (Charfi, 2012).

Regarding the concept of knowledge management, Wiig defines it as "a deliberate and explicit process through which knowledge is built and identified based on an applied approach to achieve the maximum effectiveness of the organization concerning the knowledge and intellectual assets available at its level" (Girard, J., Girard, J., 2015).

The World Intellectual Property Organization adds that knowledge management is "a discipline that encourages a consistent and integrated approach to identifying information and knowledge, which can enhance the institution's value by drawing on past experiences in current or future decision-making processes" (Dumitriu, 2016). Daisy (Nonaka, Kobayashi et al., 2008) view it as "a system based on utilizing organizational resources starting from the development of individuals' capabilities and advancing them, which contributes to achieving the desired performance" (Nonaka, Kobayashi et al., 2008). They further note that information technology is part of knowledge management but not the entirety, and that human capital is what makes the difference. Moreover, knowledge management is centered around innovation, which must be radical and impact all aspects of the organization. It is the task of intelligent individuals, and its success depends on how people share their knowledge and generate new insights (Talisayon, 2007).

2.2. Knowledge Management Processes

Studies indicate that knowledge management encompasses numerous processes, and consolidating these into a single set is challenging to agree upon, as different perspectives often define these processes. Duffy identifies five processes within his model: preservation, acquisition, organization, retrieval, and distribution (Alharithy, 2015). Meanwhile, Gilbert identifies six processes, including knowledge identification, acquisition, development, distribution, preservation, and utilization (Gilbert, 1998). Wiig categorizes these into four processes: knowledge building, capturing, compilation, and utilization (Wiig, 1993). Marquardt also presents a knowledge management model outlining six processes: acquisition, generation, storage, information extraction, transfer and dissemination, and finally, application and validation (Marquardt, 2002). Nonaka, who proposed the most renowned knowledge management model, illustrates how knowledge is generated through four key processes: socialization, externalization, combination, and internalization. According to him, these stages form a continuous cycle referred to as the "knowledge spiral" (Nonaka, 2007).

Based on the classifications of procedures for knowledge management, it is evident that there is overlap among these processes, with at least three being commonly agreed upon. Thus, we can extract the most important of these processes and summarize them into four

primary processes: knowledge creation, knowledge storage, knowledge sharing, and knowledge application. Below is a simplified definition of these processes:

- Knowledge Creation: This is the process through which a transformation occurs between tacit and explicit knowledge, moving knowledge from the individual to the collective level (Nonaka, Takeuchi, 1995). Soler notes that knowledge generation is a collective process based on both tacit and explicit knowledge (Siadat, Hoveida, Abbaszadeh, Moghtadaie, 2012).
- Knowledge Storage: This involves storing both individual and organizational knowledge in an easily retrievable manner. It employs technical structures such as information software, equipment, and human processes for storage (Koech, Boit, Maru, 2015).
- Knowledge Sharing: This term refers to the process of transferring and exchanging experiences and ideas among individuals or groups. Knowledge transfer from one person to another aims to enhance understanding and collective capabilities within the institution or community (Zamiri, Esmaeili, 2024). Various mediums facilitate knowledge sharing and transmission, such as email, phone conversations, or face-to-face interactions like meetings and conferences (Diab, 2021).
- Knowledge Application: The success or failure of institutions hinges on the extent to which they apply acquired knowledge, addressing their knowledge gaps. Effective knowledge application reduces these gaps through effective communication with individuals, meetings, and teamwork, which will help highlight their tacit knowledge, thereby contributing to knowledge generation and creation (Dhamdhere, 2015). Thus, it is essential to find new ways to leverage integrated resources where knowledge serves as the foundational element, applied in as many methods and competitive fields as possible. Performance depends on these integrated knowledge assets (Alosaimi, 2016). Consequently, knowledge application enhances administrative competencies and increases individuals' knowledge productivity to gain a competitive advantage (Lehyani, 2019).

2.3. Internal Communication and its Importance

2.3.1. Concept of Internal Communication

It refers to "the process through which information is exchanged within the organization effectively and efficiently" (Sawagvudcharee, Yolles, 2022). It is also defined as "the connection established between individuals and groups across different administrative levels and fields to design and coordinate activities for both executive and strategic planning, building appropriate relationships between management and employees" (Altuntaş, Semercioz, Noyan, 2013). Internal communication serves the functions of the organization; individuals need it to perform their assigned tasks effectively and efficiently. The integrative function of communication starts from task coordination, whether it concerns work tasks, team coordination, or unit integration, all aimed at achieving the organization's objectives (Jakubiec, 2019). Therefore, the importance of internal communication lies in its ability to enhance operations through its effectiveness among individuals, which reduces uncertainty and fosters loyalty to the organization they belong to, making the university institution more dynamic and adaptive to its operating environment (Verghese, 2017). Internal communication is the central nerve of the organization, as it conveys its culture, disseminates its objectives, strategy, and mission (Harrouz, Aissat, 2023).

2.3.2. Internal Communication and Its Impact on Knowledge Management Processes

Davenport & Prusak indicate that internal communication is one of the critical enablers of knowledge management and sharing within an organization, emphasizing electronic and computer-based communications (Davenport, Prusak, 1998). Effective communication inevitably contributes to better exchange of best practices in the knowledge field, allowing individuals to optimally utilize this knowledge to perform their duties or assigned tasks, positively reflecting on the organization's overall performance, or the quality of the teaching and research process within higher education institutions as knowledge-intensive organizations. Direct communication is considered one of the most successful and commonly used mechanisms in knowledge-sharing processes (Sarka, 2014). In a study conducted by (Gumus, 2007) on the relationship between communication and knowledge management processes, the importance of communication in influencing individuals' behavior and actions, particularly their inclination toward knowledge sharing, was highlighted, viewing it as a form of communication (Gumus, 2007). Kosir's study also confirms that achieving efficient knowledge management is linked to inducing broad behavioral, cultural, and organizational change, which can only be achieved through an effective internal communication system that aligns individual goals across different organizational levels and embraces various changes to ensure quality in higher education institutions (Kosir, 2014). Similarly, (Luther, Dahiya, 2017) studied the role of effective communication in knowledge management within organizations and considered it one of the essential tools that facilitate knowledge management processes through effective communication between top management, various managers, and their subordinates. Luthra emphasized that managers lacking communication skills cannot engage with their teams, thus failing to share crucial and valuable information and knowledge that contribute to forming a knowledge management system (Luther, Dahiya, 2017). As a result of the implications of the COVID-19 pandemic and its widespread impact, most communication methods have shifted towards electronic communications, utilizing various mechanisms such as email, video conferencing, and remote communications. This shift has increased the importance of digitization and digital transformation across various fields. Information and communication technologies inherently enable knowledge management processes, significantly contributing to their success. Additionally, these technologies are part of the essential technical foundations required for knowledge management. By providing an internal network for the organization and enhancing communication processes, substantial benefits will be achieved, including attaining desired performance and reducing costs that burden the organization (Otto, Andreas, 1997). According to UNESCO, information and communication technology plays a crucial role by increasing communication, serving as a tool for social interaction aimed at exchanging and circulating knowledge and information. Individuals capable of managing it and interacting with others in work teams will open the door to knowledge production, storage, dissemination, and application. Therefore, knowledge management based on information and communication technology should be established (Molero, Contreras, Casanova, 2017).

3. METHODOLOGY

The study was conducted to investigate the role of internal communication in activating knowledge management processes in Algerian universities from the perspective of professors. To test this, the Structural Equation Modeling (SEM) approach was utilized using the SmartPls4 software.

3.1. Questionnaire Design

The questionnaire was designed using a set of statements to measure the level of internal communication and knowledge management processes in Algerian universities, employing a five-point Likert scale according to the study by (Yahiaoui et al., 2022) as follows: "Strongly agree" = 5, "Agree" = 4, "Neutral" = 3, "Disagree" = 2, "Strongly disagree" = 1. The statements used were based on the scales of (Sun, Li, Lee, Tao, 2021; (Nguyen, Ha, 2023) for internal communication, and (McFadyen, Cannella, 2005; Kosir, 2014; Dhamdhere, 2015; Diab, 2021) for knowledge management processes.

3.2. Study Population and Sample

The study population consisted of university professors from various Algerian universities. The questionnaire was distributed electronically through various social media platforms as well as via email. The study sample comprised 115 university professors.

3.3. Validity and Reliability of the Study Tool

Table 1. Validity and Reliability of the Study Instrument

	Cronbach's Alpha	**N of Items**
Internal Communication	0.773	5
Knowledge Creation	0.758	3
Knowledge Storage	0.895	5
Knowledge Sharing	0.836	4
Knowledge Application	0.754	3
Total	0.937	20

Source: Prepared by the researchers based on the outputs of SPSSV26.

From the table, we observe that the Cronbach's Alpha value reached 0.937 for all the questionnaire statements, which exceeds the threshold of 0.7. This demonstrates the study tool's validity, dependability, and capability to accurately examine the role of internal communication in activating knowledge management processes. As a result, it can provide similar results if the study is repeated under the same conditions and circumstances.

The same applies to the statements for each variable individually, where the Cronbach's Alpha values were (0.773), (0.758), (0.895), (0.836), and (0.754) for internal communication, knowledge creation, knowledge storage, knowledge sharing, and knowledge application, respectively. All these values exceed 0.70, demonstrating the validity and reliability of the statements used to measure the study variables and accurately represent the phenomenon.

3.4. Analysis of Respondents' Answers Regarding the Study Variables

To understand the effectiveness of internal communication in Algerian universities and the extent to which knowledge management processes are adopted and practiced, this section analyzes the study sample's responses regarding the different variables.

3.4.1. Respondents' Answers Regarding the Internal Communication Variable

This section focuses on clarifying the study sample's responses concerning the internal communication variable and its statements using arithmetic means and standard deviations, as shown in the following table.

Table 2. Respondents' Answers Regarding the Internal Communication Variable

	N	Mean	Std. Deviation
Professors aim, through communication ,to help each other to solve problems and situations they face during work.	115	4.10	0.794
Communication between professors at the university is for the purpose of exchanging knowledge and information related to work and task performance (including scientific research).	115	3.91	0.960
Professors express their opinions and ideas comfortably during meetings held by the university.	115	3.37	1.054
Professors are informed of all changes that affect their tasks and functions at the university.	115	3.57	0.947
Information technology is used to exchange information between professors and their colleagues.	115	3.99	0.767
Valid N (listwise)	115	3.79	0.904

Source: SPSSV26.

From the responses related to internal communication statements, we observe that the primary purpose of communication among university professors is to exchange experiences and knowledge and to assist each other. This is evident from the arithmetic mean of the first statement, which reached (4.10) with a standard deviation of (0.794), indicating that most responses leaned towards "Agree". This suggests that communication processes in Algerian universities largely utilize information and communication technology. Overall, the responses regarding the internal communication variable tend to be "Agree", with an arithmetic mean of (3.79) and a standard deviation of (0.904), indicating good communication among various parties in Algerian universities.

3.4.2. Respondents' Answers Regarding the Knowledge Management Processes Variable

This section illustrates the trends in the study sample's responses concerning the knowledge management processes variable, which includes its four dimensions: knowledge creation, knowledge storage, knowledge sharing, and knowledge application. The arithmetic mean and standard deviation for each are presented in the following table.

The above table shows the respondents' trends concerning knowledge management processes. For the knowledge creation process, most responses lean towards "Moderately Agree", with an arithmetic mean of (3.13) and a standard deviation of (1.005), indicating that the Algerian universities included in the study are moderately engaged in creating new ideas and knowledge. For the knowledge storage process, the arithmetic mean reached (3.07) with a standard deviation of (1.022), reflecting a "Moderately Agree" response trend, suggesting that the storage of acquired knowledge is done to a moderate degree.

Additionally, the arithmetic mean for the knowledge sharing process was (3.26), with a standard deviation of (1.087), also indicating a "Moderately Agree" response trend. This implies that knowledge sharing occurs to a moderate extent among professors, staff, and the university. The arithmetic mean for the knowledge application process was (3.28) with a standard deviation of (1.024), indicating that universities and professors are inclined to apply the knowledge and experiences they acquire, as well as implement creative ideas and benefit from them. Most professors agree that teamwork yields positive results and better performance.

Table 3. Respondents' Answers Regarding the Knowledge Management Processes Variable

	N	Mean	Std. Deviation
Your university involves you in solving the problems it faces.	115	2.83	0.973
Your university informs you of various knowledge updates.	115	3.38	0.979
Your university encourages professors with distinguished creative ideas.	115	3.18	1.064
Knowledge Creation	115	3.13	1.005
Your university is supported by an effective information system.	115	2.95	1.083
Your university records previous experiences and lessons to benefit from them later.	115	2.8	1.053
Your university relies on documents and archives to acquire knowledge.	115	3.23	0.909
Your university works on encoding knowledge to facilitate access to it.	115	3.21	0.913
Your university has modern devices used for storing knowledge.	115	2.84	1.152
Knowledge Storage	115	3.07	1.022
Your university has an internal information network that facilitates access to knowledge.	115	3.16	1.182
Information and knowledge are exchanged based on modern technological means.	115	3.33	1.006
Your university holds scientific seminars with professors possessing knowledge and expertise.	115	3.4	1.074
Your university attempts to disseminate the knowledge it possesses by issuing newsletters and journals	115	3.15	1.086
Knowledge Sharing	115	3.26	1.087
Your university possesses the necessary requirements (material. financial. and human) for knowledge application.	115	3.03	1.120
Professors use technology in the execution of their assigned pedagogical tasks.	115	3.68	0.874
Your university strives to implement innovative ideas in practice.	115	3.13	1.080
Knowledge Application	115	3.28	1.024
Valid N (listwise)	115	3.19	1.035

Source: Prepared by the researchers based on SPSSV26 outputs.

In summary, it can be stated that the trends in respondents' answers regarding the knowledge management processes variable tend towards "Moderately Agree". This is reflected in the arithmetic mean of (3.19) with a standard deviation of (1.035), indicating that the adoption and practice of knowledge management processes in the Algerian universities included in the study are done to a moderate degree.

4. STRUCTURAL EQUATION MODELING

4.1. Convergent Validity

Convergent validity refers to the extent to which the statements are correlated and come together to measure a particular variable. The main indicators of convergent validity are presented in the following table.

Table 4. Convergent Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Internal Communication	0.779	0.786	0.848	0.527
Knowledge Application	0.755	0.779	0.859	0.67
Knowledge Creation	0.756	0.766	0.86	0.673
Knowledge Storage	0.897	0.903	0.924	0.709
Knowledge Sharing	0.838	0.849	0.891	0.671

Source: SmartPLS outputs.

The Cronbach's Alpha value exceeds 0.7 for all variables, indicating strong internal consistency among these variables and suggesting that the study variables exhibit high reliability. For composite reliability, both rho_a and rho_c also surpass 0.7, indicating high validity of the scales used for the variables. Additionally, the Average Variance Extracted (AVE) value exceeds 0.50 for all variables, implying that a significant proportion of the variance in the observed variables can be explained by the latent variable.

4.2. Discriminant Validity

Discriminant validity measures the extent to which the statements and dimensions are distinct from each other, meaning the ability of a variable to measure a phenomenon without overlapping with other variables. Here, cross-loading was used to assess discriminant validity, as shown in the following table.

Table 5. Cross Loading

Phrases	Internal Communication	Knowledge Application	Knowledge Creation	Knowledge Storage	Knowledge Sharing
Q1	0.711	0.356	0.277	0.198	0.413
Q7	0.42	0.505	0.79	0.492	0.486
Q8	0.518	0.621	0.881	0.593	0.617
Q9	0.412	0.685	0.582	0.881	0.668
Q10	0.404	0.638	0.624	0.865	0.678
Q11	0.318	0.532	0.435	0.738	0.631
Q12	0.375	0.653	0.487	0.873	0.66
Q13	0.399	0.605	0.468	0.846	0.629

Table 5 (cont.). Cross Loading

Phrases	Internal Communication	Knowledge Application	Knowledge Creation	Knowledge Storage	Knowledge Sharing
Q14	0.443	0.606	0.564	0.688	0.802
Q15	0.407	0.569	0.42	0.594	0.802
Q2	0.739	0.409	0.351	0.298	0.348
Q16	0.547	0.567	0.639	0.584	0.832
Q17	0.411	0.594	0.559	0.686	0.841
Q18	0.489	0.847	0.513	0.718	0.626
Q19	0.396	0.737	0.395	0.354	0.406
Q20	0.561	0.867	0.711	0.7	0.679
Q3	0.766	0.49	0.586	0.404	0.395
Q4	0.71	0.455	0.516	0.427	0.45
Q5	0.703	0.425	0.275	0.26	0.423
Q6	0.479	0.53	0.787	0.434	0.548

Source: SmartPLS outputs.

Cross-loading is based on the assumption that the loading value between a statement and the variable it measures should be higher than its loading value with other variables. From the table above, we observe that the loading value between the statements (Q1–Q5) and the internal communication variable is higher than their values with other variables. The same applies to the knowledge creation variable and its statements (Q6–Q8), the knowledge storage variable and its statements (Q9–Q13), the knowledge sharing variable and its statements (Q14–Q17), and finally, the knowledge application variable and its statements (Q18–Q20). This indicates a high level of discriminant validity for the variables and their dimensions.

4.3. Testing Study Hypotheses

This section examines the study hypotheses by first clarifying the relationship between the study variables, relying on the criteria of Fornell-Larcker. Next, using the SmartPLS program, the structural equation modeling results are displayed.

4.3.1. Relationship Between Latent Variables

In this part, the relationship between the study variables is tested using the Fornell-Larcker criterion. The square root of the average variance extracted (AVE) should be greater than the inter-variable correlations to indicate discriminant validity.

From the table, the following can be observed:

- Internal Communication has an AVE square root value of 0.726, which is high, indicating a clear distinction of this variable from the rest.
- The AVE square root values for the variables Knowledge Application, Knowledge Creation, Knowledge Storage, and Knowledge Sharing are 0.819, 0.820, 0.842, and 0.819, respectively. These high values indicate a high and clear distinction for these variables.
- The inter-variable correlation between Internal Communication and the variables (Knowledge Application, Knowledge Creation, Knowledge Storage, and

Knowledge Sharing) is less than the AVE square root for all variables, indicating the presence of discriminant validity among these variables.

Overall, it can be said that the variables clearly represent the theoretical structure they signify, with correlations indicating relationships while maintaining the uniqueness of each variable.

Table 6. Fornell-Larcker Standard

	Internal Communication	Knowledge Application	Knowledge Creation	Knowledge Storage	Knowledge Sharing
Internal Communication	0.726				
Knowledge Application	0.596	0.819			
Knowledge Creation	0.579	0.676	0.82		
Knowledge Storage	0.455	0.741	0.62	0.842	
Knowledge Sharing	0.56	0.711	0.675	0.774	0.819

Source: SmartPLS Outputs.

4.3.2. Correlation Matrix

Table 7. Correlation Matrix

	Internal Communication	Knowledge Application	Knowledge Creation	Knowledge Storage	Knowledge Sharing
Internal Communication	1000	0.596	0.579	0.455	0.56
Knowledge Application	0.596	1000	0.676	0.741	0.711
Knowledge Creation	0.579	0.676	1000	0.62	0.675
Knowledge Storage	0.455	0.741	0.62	1000	0.774
Knowledge Sharing	0.56	0.711	0.675	0.774	1000

Source: SmartPLS.

From the table, the following conclusions can be drawn:
- The correlation between Internal Communication and Knowledge Application is 0.596, a moderately positive correlation. This suggests that internal communication moderately contributes to the process of knowledge application. This can be attributed to the fact that the application process does not necessarily require extensive communication, as knowledge application can be carried out by individuals, groups, or organizational processes without needing significant communication.

- The correlation between Internal Communication and Knowledge Creation is 0.579, a moderate value. This indicates a moderate relationship between internal communication and the process of knowledge creation. This can be attributed to the fact that the professors involved in the study may not have a strong culture of knowledge sharing among themselves, which would enable them to blend their knowledge and produce new and original knowledge.
- The correlation between Internal Communication and Knowledge Storage is positive but ranges from moderate to somewhat weak, with a correlation of 0.455. This can be interpreted as indicating that the process of knowledge storage primarily depends on the available tools and technologies in institutions and universities to store knowledge and make it accessible to individuals, rather than relying on extensive and effective communication to achieve this.
- The correlation between Internal Communication and Knowledge Sharing is 0.560, a moderately positive correlation. Despite the significant role that communication plays in enhancing the sharing process, the correlation remains moderate. This reflects the culture prevalent in Algerian universities, which have not yet succeeded in adopting a high-sharing culture.

Looking at the overall relationship between knowledge management processes, it is evident that all correlations are positive and strong, reflecting the integration and interaction among knowledge management processes. Each process contributes to the success of the others, highlighting the necessity for all processes to be interconnected and synchronized to achieve the goals of knowledge management.

4.4. Results (SEM-PLS)

The following figure presents the results of structural equation modeling using the SmartPLS software version 4. Key indicators can be observed from Figure 2 and subsequently, the results are interpreted:
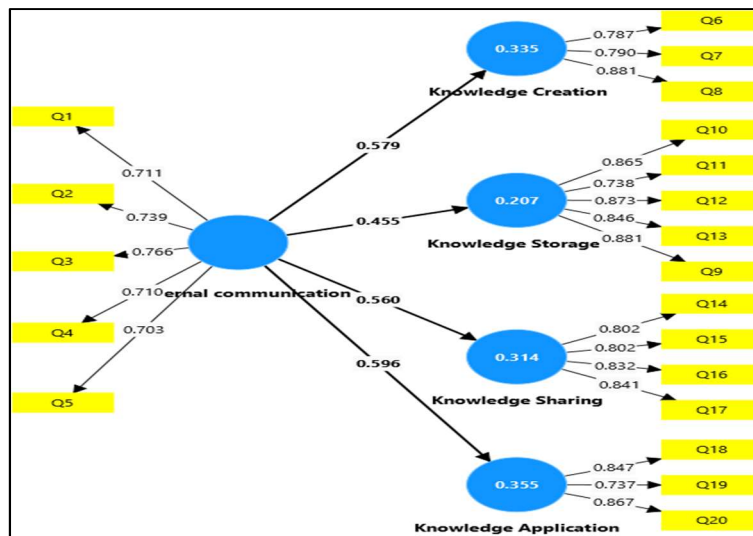
Figure 2. SEM-PLS

Source: SmartPLS Outputs.

The figure shows that the model is suitable for estimating the relationship between internal communication and knowledge management processes (Fornell, Larcker, 1981). All factor loadings for the statements used to measure the study variables exceeded 0.7, indicating good convergent validity and representation. Regarding the structural model, which focuses on the relationship between variables, the coefficients of determination (R² values) are considered acceptable. This indicates that the independent variable (internal communication) has the ability to explain variations in the dependent variables (the four knowledge management processes). To test the study hypotheses, the various path coefficients are detailed in the following table.

Table 8. Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Internal Communication -> Knowledge Application	0.596	0.604	0.068	8.719	0
Internal Communication -> Knowledge Creation	0.579	0.589	0.061	9.525	0
Internal Communication -> Knowledge Storage	0.455	0.465	0.092	4.955	0
Internal Communication -> Knowledge Sharing	0.56	0.569	0.079	7.052	0

Source: SmartPLS Outputs

Upon reviewing the table content, it can be observed that all T-values exceed 1.96, with a p-value less than 0.05. The T-values for the relationship between internal communication and the processes (knowledge application, knowledge creation, knowledge storage, and knowledge sharing) were 8.719, 9.525, 4.955, and 7.052, respectively, with a p-value of 0.000 for all hypotheses. This indicates the significance of the relationship, thus accepting all null hypotheses, implying a role for internal communication in activating all knowledge management processes from the professors' perspective. These results can be summarized as follows:

- There is a role for internal communication in activating knowledge creation in Algerian universities.
- There is a role for internal communication in activating knowledge storage in Algerian universities.
- There is a role for internal communication in activating knowledge sharing and distribution in Algerian universities.
- There is a role for internal communication in activating the application and utilization of knowledge in Algerian universities.

5. DISCUSSION

The findings of the current study highlight the importance of internal communication in universities, as they are knowledge-intensive institutions whose main activities focus on knowledge production. The results align with several studies, such as those by (Davenport, Prusak, 1998; Kosir, 2014), and (Sarka, 2014), all of which emphasized the essential role

of communication in activating and achieving knowledge management processes, considering it both an enabler and a motivator for these processes.

The current study also concurs with (Gumus, 2007) regarding the role of communication in enhancing knowledge-sharing behavior, viewing knowledge sharing as a form of communication that influences individuals' behavior and attitudes towards knowledge sharing. Furthermore, this study is consistent with the findings of (Luther, Dahiya, 2017), which highlighted that communication is a vital component and an effective tool for knowledge management processes. Managers with effective communication skills can create, manage, and share knowledge efficiently and effectively. The same applies to higher education institutions, particularly universities, where communication skills play a crucial role in equipping professors with the ability and willingness to share their knowledge with others, recognizing it as a positive practice and avoiding knowledge hoarding. This awareness stems from their understanding of the significance of teamwork and the impact of collaboration and knowledge exchange among them. Consequently, universities today are directing their efforts towards raising awareness and fostering a culture of sharing among individuals by facilitating communication among staff and faculty and leveraging the benefits of digital transformation and related technologies, which are at the forefront of current trends, to streamline knowledge management processes and highlight their outcomes.

6. CONCLUSION

Knowledge management has become one of the most important focuses for all sectors today, given the demands of the knowledge economy and its emphasis on the importance of knowledge as a fundamental resource for achieving competitive advantage and added value. This has led universities, as knowledge-intensive institutions, to adopt and emphasize this concept to ensure the preservation and dissemination of the core knowledge they possess across various levels, thereby ensuring its utilization, enhancement, and growth. Such growth can only occur through the existence of effective communication channels that facilitate the flow of knowledge to and from individuals, management, and all other stakeholders who need this knowledge. This is the focus of the current study, which seeks to explore the role of internal communication in activating the four knowledge management processes (creation, storage, sharing, and application) from the perspective of professors in Algerian universities. The study concluded that internal communication plays a positive role in activating these processes, albeit to a moderate degree. This finding has been interpreted as an indication that Algerian universities are still in the early stages of prioritizing knowledge management, which necessitates an increased awareness of the importance of knowledge management in the higher education sector. Additionally, there is a need for support from senior management to successfully implement knowledge management initiatives. It has become clear that internal communications work to build trust among individuals, thereby encouraging them to share their knowledge and benefit from it, whether to enhance knowledge productivity, improve pedagogical task performance, or in other scientific research activities.

7. STUDY LIMITATION

The current study attempted to explore the relationship between internal communications and their role in activating knowledge management processes in Algerian universities. However, it cannot be said to have covered all aspects, especially considering

that knowledge management is a comprehensive, multi-dimensional concept linked to numerous different concepts and practices. Consequently, some research perspectives and gaps could serve as future research topics for other scholars. These include strategies to enhance internal communications for fostering a culture of knowledge sharing in higher education institutions, as well as healthcare institutions. Additionally, there is a need to focus on digital transformation and its mechanisms in building knowledge-based institutions and enhancing knowledge management processes across various sectors.

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REFERENCES

Abu Saleh Md., Sohel-Uz-Zaman (2009). Knowledge inovative organization: The effect of constant organization renewal. *Journal service & management, 02*(04), 384–393. https://doi.org/10.4236/jssm.2009.2404684

Alharithy, M. (2015). Knowledge Management Process in several organizations: Analytical Study of modeling and several processes. *Procedia Computer Science*. Vol. 65, 726–733. https://doi.org/10.1016/j.procs.2015.09.017

Alosaimi, M. (2016). *The role of knowledge management approaches for enhancing and supporting education.* Thèse pour l'obtention de DOCTORAT en Sciences de Gestion. Ecole Doctorale De Management Panthéon, Université Panthéon-Sorbonne – Paris.

Altuntaş, G., Semercioz, F., Noyan, A. (2013). Linking competitive rivalry to internal communication in private healthcare organizations. *Procedia – Social and Behavioral Sciences,* 99, 809–817. https://doi.org/10.1016/j.sbspro.2013.10.55.

Charfi, A. (2012). *The Knowledge-Based Organization: Characteristics and Theoretical and Practical Utility. For the attainment of the doctorate from the university of toulouse*, Doctoral School and Specialization: ED SG – Strategy. University of Toulouse 1 Capitole.

Davenport, T. H., Prusak, L. (1998). *Working Knowledge: How organizations Manage what they Know*. Harvard Business School Press. https://doi.org/10.1145/348772.348775

Dhamdhere, S. N. (2015). Importance of Knowledge Management in the Higher Educational Institutes. *Turkish Online Journal of Distance, 16*(1), 162–183.

Diab, Y. (2021). The Concept of Knowledge Sharing in Organizations (Studying the Personal and Organizational Factors and Their Effect on Knowledge Management). *Management Studies and Economic Systems (MSES), 6*(1/2), 91–100.

Dumitriu, P. (2016). *La gestion des savoirs et connaissances dans le système des Nations Unies*. Nations Unies Genève.

Fornell, C., Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research, 18* (3), 382–388. https://doi.org/10.2307/3150980

Gilbert, P. (1998). *Practical knowledge management: A model that works*. prism, second quarter.

Girard, J., Girard, J. (2015). Defining knowledge management: Toward an applied compendium. *Online Journal of Applied Knowledge Management,* Vol. 3, Issue 1, 1–20.

Gumus, M. (2007). The Effect of Communication on Knowledge Sharing in Organizations. *Journal of Knwoledge Management Practice,* Vol. 8, No. 2, 15–26.

Harrouz, B., Aissat, W. (2023). The role of internal communication in the organizational learning process in the organization. *Revue de la communication et du journalisme,* Vol. 10, No. 2, 4–18.

Holá, J. (2012). Internal Communication in the small and medium sized entreprises. *Ekonomika a management,* Vol. 15, Issue 3, 32–43.

Ithiel de sola, P. (1980). Communications Technology and Land Use. *ANNALS, AAPSS, 451*(1), 1–12. https://doi.org/10.1177/000271628045100102

Jakubiec, M. (2019). The importantce internal communication for management of an organization. *Scientific Papers of Silesian University of Technology Organization and Management Series*, 134, 47–62. https://doi.org/10.29119/1641-3466.2019.134.4

Koech, S., Boit, J., Maru, L. (2015). Knowledge storage, retrieval and employee performance: the moderating role of employer engagement. *International Journal of Small Business and Entrepreneurship Research,* 3(6).

Kosir, S. (2014). The Role of Knowledge Management and Internal Communication for a Better Quality Assurance in Higher Education Institution. *Literacy Information and Computer Education Journal (LICEJ), 5*(3), 1641–1648. https://doi.org/10.20533/licej.2040.2589. 2014.0219

Kühn, O., Abecker, A. (1997). Corporate Memories for Knowledge Management in Industrial Practice: Prospects and Challenges. *Journal of Universal Computer Science, 3*(8), 929–954. https://doi.org/10.1007/978-3-662-03723-2_9

Lehyani, F. (2019). *Impact of Knowledge Management and Total Quality Management on Staff Efficiency and Supply Chain Performance. Management and Administration*. Dissertation to obtain the degree of doctor from the university community of grenoble alpes University, Specialization: Industrial Engineering. University of Grenoble Alpes; University of Sfax, Tunisie.

Luther, A., Dahiya, R. (2017). *Effective Communication: A Tool in Manager's Hand for Knwoledge Management in Organizations. In Emerging issues in Human Resources Management: Perspectives and Avenues*. Adhyayan Publishes & Distributors.

Marquardt, M. (2002). *Building the learning organization – mastering the 5 eleements for corporate learning* (Vol. 2 ed edition). Davies-Black Publishing; INC.

McFadyen, M. A., Cannella, A. A. (2005). Knowledge Creation and the Location of University Research Scientists' Interpersonal Exchange Relations: Within and Bryond the University. *Strategic Organizations, 3* (2), 131–155. https://doi.org/10.1177/1476127005052207

Molero, N., Contreras, G., Casanova, R. (2017). Knowledge management as a Tool For The Productivity of Research in The University Sector. *Revista Electronica de Humandades, Educacion Y Comunicacion Social,* Vol. 24.

Murray, E. J. (2007). *Knowledge Management in Modern Organizations*. Idea Group Publishing.

Nagachevska, O., Dzhereleiko, S., Kushka, P. (2023). Efficient internal communications in the banking Sector singnificance, functions, and technique of their implementation. *Journal of Innovations and Sustainability, 7*(2). https://doi.org/10.51599/is.2023.07.02.13

Nguyen, C. M., Ha, M.-T. (2023). The Interplay Between Internal Communication, Employee Engagement, Job Satisfaction, and Employee Loyalty in Higher Education Institutions in Vietnam. *Humanities & Social Sciences Communication*, 1–13. https://doi.org/10.1057/s41599-023-01806-8

Nonaka, D., Kobayashi, J. et al. (2008). Malaria education from school yo community in oudomxay province, lao PDR. *Parasitology Internatonal, 57*(1), 76–82. https://doi.org/10.1016/j.parint.2007.09.005

Nonaka, I. (2007). *The Knowledge-Creating Company*. Harvard Business Review.

Nonaka, I., Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* Oxford university press.

Ragaa, H. (2021). Knowledge Management processes and their impact on firm's performance-Field study in Sonelgaz company-Unit of DJELFA. *Economic and Management Research Journal, 15*(02), 99–117. https://doi.org/10.54246/1548-014-003-067

Sarka, H. (2014). Tools of Internal Communication from Knowledge transfer Perspective. *Journal of Competitiveness, 6*(4), 50–62. https://doi.org/10.7441/joc.2014.04.04

Sawagvudcharee, O., Yolles, M. (2022). Inside Out With Knowledge Management toward Internal Communication Facilitating Transformational Change Efficiency. *International Journal of Economics, Business and Management Research, 06*(04), 120–132. https://doi.org/10.51505/IJEBMR.2022.6410

Siadat, S., Hoveida, R., Abbaszadeh, M., Moghtadaie, L. (2012). Knowledge creation in universities and some related factors. *Journal of Management Development, 31*(8), 845–872. https://doi.org/10.1108/02621711211253286

Sun, R., Li, J.-Y. Q., Lee, Y., Tao, W. (2021). The Role of Symmetrical Internal Communication in Improving Employee Experiences and Organizational Identification During Covid-19 Pandemic Induced Organizational Change. *International Journal of Business Communication, 60*(4), 1–29. https://doi.org/10.1177/23294884211050628

Talisayon, S. (2007). *Knowledge Management: From Brain to Business*. Published by the Asian Productivity Organization.

Verghese, A. (2017). Internal Communication: Practices and Implications. *Journal of Indian Management,* 103–113.

Wiig, K. M. (1993). *Knowledge management foundation-thrinking about thrinking – how people and organizations create, represent, and use knowledge.* Schema press.

Yahiaoui, F., Chergui, K., Aissaoui, N., Brika, S. K., Lamari, I. A., Musa, A. A., Almezher, M. (2022). The Impact of Total Quality Management Practices in Algerian Higher Education Institutions. *Frontiers in Psycology*, 1–14. https://doi.org/10.3389/fpsyg.2022.874209

Zamiri, M., Esmaeili, A. (2024). Methods and Technologies for Supporting Knowledge Sharing within Learning Communities: A Systematic Literature Review. *Administration. Scinces, 14*(1). https://doi.org/10.3390/admsci14010017

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