



THE IMPACT OF WORKFORCE AGILITY ON KNOWLEDGE MANAGEMENT: AN EMPIRICAL STUDY ON THE ACADEMICS WORKING IN THE ISLAMIC UNIVERSITY OF GAZA AND AL-AZHAR UNIVERSITY IN GAZA STRIP

Deema J. Shatali¹

¹*MBA - Researcher*

Abstract

This Empirical study aims to investigate the impact of workforce agility on Knowledge Management on the academics who are working in the Islamic University of Gaza and Al-Azhar University in Gaza strip. The study used quantitative method distributing a questionnaire and adapted the descriptive analytical approach. HR agility is the independent variable with four sub variables: proactivity, flexibility and adaptability, resilience and competence, while knowledge management is the dependent variable with also four sub variables: creation, storage and retrieval, transfer and application.

The study found that there is a significant relationship between the two variables and also there is a significant effect of (flexibility and adaptability, resilience and competence) on knowledge management, but there is an in significant effect of (proactivity) on knowledge management.

It is recommended to have more deep studies on workforce agility and knowledge management, study the impact of employees' proactivity on knowledge management. Also, it is recommended for IUG and AUG to hire more females as academics and to aware their staff about the new HR characteristics which are needed in the rapid changeable environment..

Keywords

Workforce Agility, Knowledge Management

Introduction

The very changing business world is a clear representation of the rapid environment. It is important to keep up with them to stay at the market and at the road of competitive advantage. Because of these changings, knowledge management (KM) exists to identify, create, story, transfer and apply the needed knowledge at the needed time and place to achieve the firm's strategic goals and improve its performance. The employees are one requirements of the KM's process which agility can give them advantage to manage knowledge more efficiently.

KM can easily be defined as what (Sanguankaew & Ractham, 2019) explained as the process of knowledge creation, knowledge storage and retrieval, knowledge transfer and knowledge application of both tacit and explicit knowledge. On the other hand, workforce agility (WFA) is defined by (Munteanu, 2019) as, "the ability to react quickly as possible, find creative and innovative solutions and make the best decisions." Hence, KM is a process headed by the workforce and agility can give them and the whole process privilege.

(Yee, Tan, & Thurasamy, 2019) clarified the basics of KM system from seizing valuable knowledge, hiring intellectual assets whom the workforce is one of them, and choosing the right KM tool and approach. Meanwhile, (Tessarini Junior & Saltorato, 2021) reviewed all workforce agility's literature and put an agenda for future studies. The study clarified proactivity, flexibility and adaptability, resilience and competence as mutual workforce agility's dimensions used in the reviewed literature which will be used in this study.

However (Almahamid, 2018) studied the relationship between agile manufacturing /organizational agility and workforce agility, organizational practices and WFA and WFA and KM process and then put a theatrical framework of these two variables, this study will only focus on WFA and KM in deep explanations in the literature and previous study preview, add more dimensions of these variables, and test them using a questionnaire.

Study Problem Statement

KM creation and transfer depend on the interactions between tacit knowledge and explicit knowledge which are in match with dynamic and social dimensions. The social dimension refers to the individuals' interactions with each other (Canonica, Esposito, De Nito, Iacono, & Consiglio, 2019). To emphasize the role of human in the process of K and KM, (Kaur, 2015) explained, "Knowledge is essentially related to human action." Also, the researcher defined KM as, "the concept of professional practice which improves the capabilities of human resources of the organization and enhances their ability to share what they know."

According to the above, the employees have a key role in the process of KM who will need skills and competences which suits this process with its all the changings, tools and approaches. Agile workforce is also a need in a business world, whether with or away from KM, that still needs more studying by considering other variables which adds positive effect on the organization's goals, mission and vision (Azmy, 2021). In addition, (Azmy, 2021) ended up by clarifying the benefits of improving the employee's K as,

"Employees who always encourage themselves to improve their skills, knowledge, and abilities will provide a learning atmosphere for their teammates. This will have a domino effect that positively encourages employees in other teams or departments. If this can continue to happen, the HR strategy that is implemented will ensure the formation of WFA where all employees will move with the company or organization with an entrepreneurial spirit, vision, and work team spirit, to achieve the goals of the organization or company."

These two variables are not well-studied together profoundly and tested using a research's tool in one research. According to this, this study aims to answer following main question: "What is the impact of workforce agility on knowledge management?"

Study Variables

The study variables are:

1. The independent variable: workforce agility with four sub variables taken from the study of (Tessarini Junior & Saltorato, 2021) :
 - a. Proactivity
 - b. Flexibility and adaptability
 - c. Resilience
 - d. Competence
2. The dependent variable: knowledge management with four sub variables taken from the study of (Sanguankaew & Ractham, 2019):
 1. Creation
 2. Storage and retrieval
 3. Transfer
 4. Application
3. The demographic variables:
 - a. Gender
 - b. Age
 - c. Educational qualifications
 - d. Years of experience as a lecturer
 - e. Current workplace

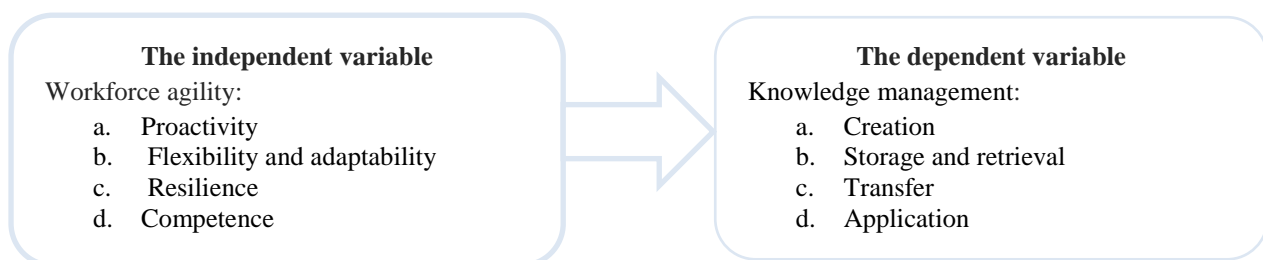


Figure (1) – Study Variables

Source: Articulated by the researcher, 2022

Study Hypotheses

The study hypotheses are:

1. There is a statistically significant relationship at level $\alpha \leq 0.05$ between workforce agility and knowledge management.
2. There is a statistically significant impact at level $\alpha \leq 0.05$ of workforce agility on knowledge management.

Study Objectives

This study mainly aims to achieve the following objectives:

1. To determine the relation between workforce agility and knowledge management.
2. To determine the level of impact of workforce agility on knowledge management.
3. To determine the most important factors, problems, and obstacles related to workforce agility that are negatively influencing knowledge management.
4. To provide recommendations to the concerned organizations to reduce the negative influence of the mentioned factors and utilize the workforce agility to enhance knowledge management in a more proper way.

Study Importance

The study importance is as the following:

1. Provide additional resource to interested researchers, in addition to academic and research institutions, which will contribute to developing farther research related to the subject matter of the study.
2. Provide useful resource to interested professionals, which will contribute to inducing developments in the related areas of the study.
3. Provide suggestions to deal with the discovered problems and obstacles, which will contribute to enhance WFA and KM process of the concerned organizations.
4. Provide a logical diagnosis of the relation between study variables which will lead to improvements in KM process, and consequently will contribute to improving the services provided by the concerned organization to the society.

Literature and Previous Study Preview

Workforce Agility (WFA):

The effect of the fast changing world is obvious in every sector especially in the business world. It imposes its rules on it severely which forces business s' decision makers to go along with it. This was confirmed by (Das, Mukhopadhyay, & Suar, 2022) as, "business environment has been changed following globalization in early 1990s. Technological disruption, abrupt changes, and turbulence have become the characteristics of the business world." To deal with the changes properly, agility is a key to do so. (Munteanu, Bibu, Nastase, Cristache, & Matis, 2020) discussed this by saying, "agility could be a solution for organizations that are oriented towards sustainable development to meet these challenges." The challenges as clarified by the authors as, "The current business environment has become volatile, uncertain, complex, and ambiguous (VUCA), with numerous opportunities and threats, presenting itself as a network of organizations that constantly appear, develop, or disappear."

Agility can be defined as a general term as , "the ability to gain effective advantage, exploit opportunities and withstand threats derived from frequent and sometimes unexpected changes, responding quickly by reconfiguring resources, strategies, and people in an efficient and effective manner." (Tessarini & Saltorato, 2021) Agility is a key to gain sustainability, but it can't be established by technological tools only. Human recourse is essential to implement agility so that to reach sustainability. Deliver agility as an organizational culture to the employees gives them advantages such as being more productive, more competitive and more profitable. So, agile workforce is a strategic resource (Munteanu, Bibu, Nastase, Cristache, & Matis, 2020). Also, agile employees enhance the organizational dynamic capabilities for example, they can improve the firm's competitive advantage and its performance and reputation (Das, Mukhopadhyay, & Suar, 2022).

Consequently, workforce agility's definition can be assigned in accordance to the perspective it's been looking at. (Petermann & Zacher, 2022) explained, "workforce agility is described by a multitude of different definitions, theories, and conceptualizations in the current literature." (Saeed, et al., 2022) also assured this, "aside from the fact that WFA is critical in today's changing business climate, there is no precise theory or definition of workforce agility." This is may be the dilemma of this concept as (Saeed, et al., 2022) illustrated, "few studies have examined employee agility from a conceptual viewpoint, especially in education units." However, WFA can be described as (Das, Mukhopadhyay, & Suar, 2022) defined it, "workforce agility depends on how employees handle

and respond to changes in unpredictable market conditions.” Likewise, (Tessarini Junior & Saltorato, 2021) concluded the meaning of it as, “workers’ ability to adjust to a fast-changing, flexible and uncertain work environment through proactive and adaptive knowledge, skills, behaviors, and attitudes.” So, WFA is about multi-skilled employees who are alerted to any unexpected or expected events and have the capability to deal with them in an efficient way.

(Tessarini Junior & Saltorato, 2021) reviewed WFA’s studies and asked what an agile employee is and answered it by assigning four dimensions out of the literature:

1. Proactivity is about motivated, curious and collaborated employees who are more likely to take important decisions and possess problem solving skills. (Petermann & Zacher, 2022) explained proactivity as the workers with anticipation behaviors, initiating behaviors and have a positive impact on their surroundings.
2. Flexibility and adaptability refers to the ability to do multi tasks simultaneously. An employee who learns new tasks, skills, and procedures continually is able to get along with others with their different backgrounds, puts several cinereous of what comes next in the work’s environment and has the ability to express his/her self is an adaptable employee (Petermann & Zacher, 2022).
3. Resilience is connected to proactivity which means having a positive attitudes towards the changes as well as the need to work under possible stressful and unexpected circumstances. To master it, dealing with these stressful and unexpected situations should be functioned effectively (Petermann & Zacher, 2022).
4. Competence refers to the speed to understand and develop new ideas, knowledge, technologies and work procedures and the ability to deal with them especially the technological information and tools.

WFA needs aspects to promote it to any organization that is going through unstable events. (Tessarini Junior & Saltorato, 2021) concluded them in a table as the following :

- 1- Learning and training includes four aspects :
 - a. Cross training is one of training practices that is attached to workforce agility which was applied to operation management like, factories that give the employees the ability to execute multi tasks when needed.
 - b. Cognitive abilities are linked to promote agility such as, problem solving skills, logical thinking and reasoning.
 - c. Organizational learning is about the existence of learning environment in the organization in addition to the employees’ ability to learn while working whether in a direct or indirect way.
 - d. Practical application of knowledge
- 2- Work organization includes four aspects:
 - a. Control over work and autonomy refers to give the employees the chance to control their own work which it is a predictor of agile workforce. It is also agreed between researchers that autonomy enhances workforce agility.
 - b. Teamwork and collaboration: it is not agreed between all studies that teamwork has a direct relationship with agility, but it exists in some studies. On the other hand, it is agreed between researchers that collaboration enhances workforce agility.
 - c. Job enrichment, job enlargement and job rotation give workers more sharing, so that power which makes them more capable to perform mutable tasks. This is a way for agility.
 - d. Self-managed team is a result of the mastering the pervious points in which all promote employees agility.
- 3- Human resource management includes seven aspects :
 - a. Skill-based pay.
 - b. Team-based production incentives.
 - c. Non-monetary rewards, are all improve agility and more effective than the traditional way to rewarding.
 - d. Feedback.
 - e. Talent management is enhanced by recruiting employees with certain characteristics like, motivation, attitudes, behaviors, and physical and cognitive abilities which promote their agility.
 - f. Agility goal setting may increase agility.
 - g. Staffing motivates agility.

- 4- Culture and structure includes two aspects :
 - a. Horizontal structure means reducing hierarchy and this is a significant role to enhance workforce agility.
 - b. Information and communication: an effective communication system and information transformation are key points to enhance agility.

Knowledge management (KM)

Knowledge (K) is defined by (Kaur, 2015) as, "familiarity, awareness or understanding of someone or something, such as facts, truths, or principles, which is acquired through experience or education by perceiving, discovering, or learning." Also, (Sulistiawan, Moslehpour, Diana, & Lin, 2022) illustrated the meaning of K as, "a resource has gradually become the core resource of organizations in the era of the knowledge economy". This is a conformation of what (Canonic, Esposito, De Nito, Iacono, & Consiglio, 2019) expressed that K is significant to achieve competitive advantage and this can't be accomplished without managing K by creation, storing, diffusion and transfer. Managing K clearly intends to lead K in a way to benefit the firm. Similarly, (Sarayreh, Mardawi, & Dmour, 2012) explained that KM is about collecting all the ideas and experiences to leverage the firm's function.

The forms of K can't be ignored and not mentioning them in the field of K because they are the basics of its process. K's forms are as explained by (Canonic, Esposito, De Nito, Iacono, & Consiglio, 2019):

- 1- Explicit knowledge can easily be demonstrated, went through procedures, transferred and saved. Likely, (Baláž, Williams, Moravčíková, & Chrančoková, 2019) said, "explicit knowledge is relatively easy to codify and transfer. Its transfer often involves virtually no cost." Hence, it is the kind of (K) that can be measured.
- 2- Tacit knowledge can't be recognized but to oneself; it is not easy to transfer it to others by languages because it is deep in a shape of actions, attitudes, emotions and behavior. (Baláž, Williams, Moravčíková, & Chrančoková, 2019) assured this as, "tacit knowledge is tied to its bearer (an individual or a society). The transfer of tacit knowledge is most effectively realized via human mobility which enables face-to-face exchanges, or direct observation." likewise, (Yee, Tan, & Thurasamy, 2019) confirmed this, "Tacit knowledge is difficult to transmit outside the network in which it was established." This type of (K) is hard to measure.

To activate KM, K goes through a process and four activities as explained in (Sanguankaw & Ractham, 2019) :

- 1- Knowledge Creation is either emergence of new (K), or alteration of a standing one which it is a way of innovation. This also was assured by (Kaur, 2015) as, "knowledge creation is also supported by relevant information and data which can improve decisions and serve as building blocks in the creation of new knowledge." The process of knowledge creation is the core of organizational knowledge creation leading to organizational competitive advantage. According to (Canonic, Esposito, De Nito, Iacono, & Consiglio, 2019), this process depends on the interaction between tacit and explicit knowledge known as knowledge conversion.
- 2- Knowledge Storage and Retrieval stands for keeping, holding and sharing knowledge over time and space to minimize work duplication and wasting resources. Likewise, (Arpaci, Al-Emran, & Al-Sharaf, 2020) clarified knowledge storage as the techniques of store and recover all types of data, information and (K).
- 3- Knowledge Transfer is using different communication tools to distribute (K) to every individuals, groups or organizations. According to (Krylova, Vera, & Crossan, 2016), (K) transfer is a continuous process that includes challenges and opportunities which can't be anticipated from the beginning. This process depends also, as knowledge creation, on the interaction between tacit and explicit knowledge known as knowledge conversion (Canonic, Esposito, De Nito, Iacono, & Consiglio, 2019).
- 4- Knowledge Application is the process of implementation and application of (K) to reach the needed competitive advantage and make it real. The study of (John & Spender, 2015) clarified (K) application within China's context as, "utilizing the knowledge and technology generated into new products and processes."

To implement the system of KM, management has to convince its employees about its benefits for them as individuals and for the firm itself. People will be more motivated when they realize how KM affects their performance and the intellectual competence. (Yee, Tan, & Thurasamy, 2019) clarified two approaches that management can apply :

- 1- The stick approach is about sending daily reminders and emails to the employees commanding them to share (K) in their day to day interactions and engagements. Employees respond to this approach more than the coming one.
- 2- The carrot approach is about encouraging the employees to keep, improve and share (K) by adding more credit to the year-end job performance appraisal. This approach is better than the stick approach when it comes to (K) quality.

The relationship between workforce and knowledge management:

The concept of K is at the first place related to human action which requires different human interactions like, experiences and education to be gained. Further, one definition of KM is concluded by (Kaur, 2015), as “Knowledge Management is the concept of professional practice which improves the capabilities of human resources of the organization and enhances their ability to share what they know.” Alike, (John & Spender, 2015) asserted that the elements of KM are processes, technology or culture and people.

(Yee, Tan, & Thurasamy, 2019) stated deeply how important and essential the employees are in the circle of KM and how the organization should involve them in the process by asserting the benefits of KM and what they can gain out of it. The researchers asserted, “organizational management must build trust and mutual confidence through transparency, communication, and ethical behavior to motivate employees for knowledge management.”

Hence, the workforce is a significant component of the KM process whether as a main source of K or as a tool to apply and improve KM.

Study Methodology:

The descriptive analytical approach was adopted, as according to (Frankenfield, 2022), the descriptive approach describes the state of affairs as it exists at present as it is reported by the researcher as it has happened to understand changes that have occurred. While, in the analytical approach the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

Study Data Sources:

The data sources are as follows:

1. The secondary data sources: This includes textbooks, journals, research papers, records, and web sites.
2. The primary data sources: This includes the questionnaire that was developed and administered to collect the needed data from the research sample.

Study Population and Sample:

According to the Islamic University of Gaza (IUG), there are 346 academics while, there are 165 academics working in AL-Azhar University (AUG) (February, 2023). The academics in both universities are in a fixed employment contracts. A stratified random sample was used to collect the date; the sample size was determined using the following equation (Moore et. al. 2003):

$$n = \left(\frac{Z}{2m}\right)^2$$

Accordingly, the sample is 220 academics divided as 149 from IUG and 71 from AUG; out of 238 questioners were distributed, 228 were returned.

Study Tool Design and Data Measurement Scale:

A questionnaire was designed to study — The Impact of Workforce Agility on Knowledge Management between the academics working in the Islamic University of Gaza and Al-Azhar University in Gaza strip-. The questionnaire included the following sections:

1. Section one: Includes research sample characteristics which are: (gender, age, academic qualification, years of experience as a lecturer and current workplace).
2. Section two: Includes workforce agility (25 items).
3. Section three: Includes knowledge management (20 items).

A 1 to 10 scale was used to answer the questionnaire items. As 10 indicates the highest level of approval, where 1 indicates the lowest level of approval.


Item	Strongly Disagree									Strongly Agree
Scale	1	2	3	4	5	6	7	8	9	10

Table (1) – Data Measurement Scale

Validity of the Questionnaire: is used to test the validity of the questionnaire. It is measured through measuring the correlation coefficients between each item in a field and the whole field. It is measured between 0.498 and 0.894.

Structure Validity: It varies between 0.674 and 0.902.

Reliability of the Questionnaire:

The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflect a higher degree of internal consistency. The value of Cronbach's Alpha equals 0.938; this value is considered high which indicates an excellent reliability of the entire scale.

Descriptive Analysis of the Sample Personal Characteristics:

1-Gender:

Table (2) clarifies that 85.1% of the respondents are men, while 14.9 % are females. This reflects that women's academic journey is subjected to the social standards and responsibilities which restrict their existence in this field.

Personal Information		Frequency	Percent
Gender	Male	194	85.1
	Female	34	14.9

Table (2)- Gender

2-Age:

Table (3) shows 20.6 % of the respondents are less than 40 years, while 79.4 % of them are more than 40 years indicating that the field of academia is stable as a career.

Personal Information		Frequency	Percent
Age	Below 30	23	10.1
	30 – Below 40 years	24	10.5
	40 – Below 50 years	81	35.5
	50 years and above	100	43.9

Table (3)- Age

3- Academic qualification:

Table (4) shows that 28.1 % of the respondents have a master degree and 71.9 % of them have a PhD. This reflects the role of recruiting in these university preparing to hire PhD holders which suits the nature of the academic work.

Personal Information		Frequency	Percent
Academic qualification	Master degree	64	28.1
	PhD	164	71.9

Table (4)- Academic qualification

4- Years of experience as a lecturer:

Table (5) represents that 21.9 % of the respondents have been working as lecturers for less than 10 years and 78.1 % of them have been working as lecturers for more than 10 years reflecting their commitment to their jobs.

Personal Information		Frequency	Percent
Years of experience as a lecturer	Less than 5 years	26	11.4
	5 – Less than 10 years	24	10.5
	10 – Less than 15 years	47	20.6
	15 years or more	131	57.5

Table (5)- Years of experience as a lecturer

5- Current workplace:

Table (6) shows that 65.4 % of the respondents are working at The Islamic University of Gaza and 34.6 % of them are working at Al-Azhar University.

Personal Information		Frequency	Percent
Current Workplace	The Islamic University of Gaza	149	65.4
	Al-Azhar University	79	34.6

Table (6)- Current workplace

Analysis for each field

The mean, standard deviation, proportional mean and T test-value, were used for data analysis purposing all fields and items of the questionnaire to determine the tendency and ranking according to the following:

1. HR agility

1.1 Proactivity

Table (7) shows item “You can take important decisions” was ranked first by having the highest proportional mean valued 91.27%, where item “You consider yourself a curious employee” was ranked eighth by having the lowest proportional mean valued 50.35%. In general, the items of the “Proactivity” were statistically high with a proportional mean valued 80.17%.

The finding of the entire item agrees with the literature of workforce agility which the study of (Tamtam & Tourabi, 2020) is one of, but the low ranking of item 2 “You consider yourself a curious employee” surprisingly disagrees with the findings of (Storme, Suleyman, Gotlib, & Lubart, 2020) which said that the curious employees have the privilege to respond to changes. This finding reflects the negative connotation of curiosity from both social and religious perspectives which do not differentiate between job-related curiosity or personal-related curiosity. This was expressed directly by the responses during filling the questionnaire.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You consider yourself a motivated employee	8.24	1.63	82.37	25.31*	0.000	6
2.	You consider yourself a curious employee.	5.04	3.15	50.35	-2.23*	0.027	8
3.	You can collaborate with your colleagues.	8.76	1.35	87.63	36.61*	0.000	2
4.	You can take important decisions.	9.13	6.35	91.27	8.63*	0.000	1
5.	You possess problem solving skills.	8.64	1.30	86.36	36.56*	0.000	3
6.	You can forecast the coming events.	7.72	1.65	77.24	20.39*	0.000	7
7.	You own initiating behaviors.	8.29	1.48	82.89	28.41*	0.000	5
8.	You can influence your surroundings positively.	8.32	1.46	83.23	29.07*	0.000	4
	All items of the field	8.02	1.33	80.17	28.59*	0.000	

Table (7)- Proactivity

* The mean is significantly different from 5.5

1.2 Flexibility and adaptability

Table (8) shows item “You have the ability to get along with others with their different backgrounds” was ranked first by having the highest proportional mean valued 86.05%, where item “You have the ability to do multi tasks simultaneously” was ranked fifth by having the lowest proportional mean valued 81.36%. In general, the items of the “Flexibility and adaptability” were statistically high with a proportional mean valued 83.48%.

This result agrees with the literature of workforce agility like, (Saeed, et al., 2022) which concluded that workforce agility has several characteristics in which flexibility and adaptability are one of.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You have the ability to get along with others with their different backgrounds.	8.61	6.42	86.05	7.30*	0.000	1
2.	You can learn new tasks, skills, and procedures continually.	8.31	1.57	83.11	27.01*	0.000	3
3.	You have the ability to get along with others with their different backgrounds.	8.61	6.42	86.05	7.30*	0.000	1
4.	You can put several cinereous of what comes next in the work's environment.	8.14	1.49	81.45	26.74*	0.000	4
5.	You have the ability to express yourself.	8.54	1.65	85.44	27.79*	0.000	2
	All items of the field	8.35	1.77	83.48	24.26*	0.000	

Table (8)- Flexibility and adaptability

* The mean is significantly different from 5.5

1.3 Resilience

Table (9) shows item “You show positive attitudes towards the changes” was ranked first by having the highest proportional mean valued 83.22%, where item “You need to work under unexpected circumstances” was ranked fourth by having the lowest proportional mean valued 77.68%. In general, the items of the “Resilience” were statistically high with a proportional mean valued 80.39%.

This result supports (Petermann & Zacher, 2022) with their developed model of workforce agility in which

supports resilience as a main dimension to measure workforce agility.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You show positive attitudes towards the changes.	8.32	1.44	83.22	29.43*	0.000	1
2.	You need to work under possible stressful circumstances.	8.10	1.69	80.96	23.17*	0.000	2
3.	You need to work under unexpected circumstances.	7.77	1.94	77.68	17.60*	0.000	4
4.	You can deal with the unexpected events effectively.	7.97	1.63	79.69	22.84*	0.000	3
	All items of the field	8.04	1.30	80.39	29.42*	0.000	

Table (9): Resilience

* The mean is significantly different from 5.5

1.4 Competence

Table (10) shows item “You can deal with the new ideas” was ranked first by having the highest proportional mean valued 85.44%, where item “You can understand and develop new technologies quickly” was ranked eighth by having the lowest proportional mean valued 78.38%. In general, the items of the “Competence” were statistically high with a proportional mean valued 82.47%.

This result comes along with (Patil & Suresh, 2017) who confirmed competency, it is also called self-awareness, as one of workforce agility’s enablers defined as quick developing new skills, information and technologies that fit the changes.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You can understand and develop new ideas quickly.	8.29	1.50	82.85	28.04*	0.000	3
2.	You can understand and develop new knowledge quickly.	8.26	1.41	82.63	29.63*	0.000	4
3.	You can understand and develop new technologies quickly.	7.84	1.67	78.38	21.17*	0.000	8
4.	You can understand and develop new work procedures quickly.	8.21	1.47	82.06	27.89*	0.000	6
5.	You can deal with the new ideas.	8.54	1.54	85.44	29.84*	0.000	1
6.	You can deal with the new knowledge.	8.43	1.55	84.25	28.49*	0.000	2
7.	You can deal with the new technologies.	8.19	1.62	81.85	24.91*	0.000	7
8.	You can deal with the new work procedures.	8.23	1.63	82.28	25.33*	0.000	5
	All items of the field	8.25	1.20	82.47	34.69*	0.000	

Table (10) - Competence

* The mean is significantly different from 5.5

HR agility

Table (11) shows the mean of all items equals 8.16 (81.60%), Test-value = 35.39 and P-value =0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean is significantly greater than the hypothesized value 5.5. It is concluded that the respondents agreed to “HR agility”.

The result of the each item supports other studies. For instance, the “Flexibility and adaptability” item agrees with (Qin & Nembhard, 2015) who assured that workforce flexibility as a main contribution to develop and enhance workforce agility. As for the “competence” item, (Tessarini Junior & Saltorato, 2021) built their workforce agility’s framework where competence is one of the variables that reflects the meaning of it. Also, the findings agrees with (Munteanu, Bibu, Nastase, Cristache, & Matis, 2020) who confirmed that agile employees pro-act to find applicable solutions. To emphasize the relationship between agility and resilience, (Braun, Hayes, Frautschy DeMuth, & Taran, 2017) concluded that resilience reduces the stress coming along with agility’s demands.

Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
Proactivity	8.02	1.33	80.17	28.59*	0.000	4
Flexibility and adaptability	8.35	1.77	83.48	24.26*	0.000	1
Resilience	8.04	1.30	80.39	29.42*	0.000	3
Competence	8.25	1.20	82.47	34.69*	0.000	2
All Items of HR agility	8.16	1.13	81.60	35.39*	0.000	

Table (11)- HR agility

*The mean is significantly different from 5.5

2. Knowledge management

2.1 Creation

Table (12) shows item “You consider yourself an innovative employee” was ranked first by having the highest proportional mean valued 84.30%, where item “You can translate your emotions into a clear knowledge” was ranked seventh by having the lowest proportional mean valued 80.44%. In general, the items of the “Creation” were statistically high with a proportional mean valued 82.83%.

This finding supports the outcome of (von Krogh, Nonaka, & Rechsteiner, 2012) that assured that knowledge creation in organization is a shared efforts from the employees, as individuals, and the level of organizational knowledge.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You can make use of new information and data to create new knowledge.	8.26	1.38	82.59	30.21*	0.000	5
2.	You can make use of new information and data to replace an old knowledge to a new knowledge.	8.36	1.30	83.64	33.22*	0.000	3
3.	You consider yourself an innovative employee.	8.43	1.36	84.30	32.53*	0.000	1
4.	You can translate your actions into a clear knowledge.	8.39	1.33	83.86	32.83*	0.000	2
5.	You can translate your attitudes into a clear knowledge.	8.24	1.52	82.37	27.17*	0.000	6
6.	You can translate your emotions into a clear knowledge.	8.04	1.69	80.44	22.67*	0.000	7
7.	You can translate your behavior into a clear knowledge.	8.26	3.05	82.63	13.68*	0.000	4
	All items of the field	8.28	1.31	82.83	32.07*	0.000	

Table (12)- Creation

* The mean is significantly different from 5.5

2.2 Storage and retrieval

Table (13) shows item “You can make use of knowledge to avoid work duplication” was ranked first by having the highest proportional mean valued 82.54%, where item “You can recover all types of data, information and knowledge” was ranked fifth by having the lowest proportional mean valued 78.38%. In general, the items of the “Storage and retrieval” were statistically high with a proportional mean valued 81.04%.

This findings agrees with the outcome of (Prusak, 2019) that said that preventing knowledge from loss is one of the main functions and tasks during operating knowledge management. Also, (Yee, Tan, & Thurasamy, 2019) confirmed that people improve their knowledge by taking in to consideration its usage and storage.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You can save knowledge for along time.	8.18	1.62	81.80	25.02*	0.000	3
2.	You can restore saved knowledge after along time.	8.00	1.72	80.04	22.03*	0.000	4
3.	You can make use of knowledge to avoid work duplication.	8.25	1.48	82.54	28.16*	0.000	1
4.	You can make use of knowledge to avoid wasting resources.	8.25	1.46	82.46	28.38*	0.000	2
5.	You can recover all types of data, information and knowledge.	7.84	1.77	78.38	19.89*	0.000	5
	All items of the field	8.10	1.32	81.04	29.73*	0.000	

Table (13)- Storage and retrieval

* The mean is significantly different from 5.5

2.3 Transfer

Table (14) shows item “You use different communication tools to deliver knowledge to your colleagues” was ranked first by having the highest proportional mean valued 83.64%, where item “You use different communication tools to deliver knowledge to the organization” was ranked fourth by having the lowest proportional mean valued 81.05%. In general, the items of the “Transfer” were statistically high with a proportional mean valued 82.45%.

The meaning of “transfer” agrees with the core meaning of knowledge which is sharing one’s point of view as defined by (Kaur, 2015). The findings supports also the researcher conclusion of KM as enhancing the capabilities of human recourse and their ability to share their knowledge.

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	You use different communication tools to deliver knowledge to your colleagues.	8.36	1.49	83.64	28.94*	0.000	1
2.	You use different communication tools to deliver knowledge to all groups	8.22	1.57	82.19	26.07*	0.000	3
3.	You use different communication tools to deliver knowledge to the organization.	8.11	1.81	81.05	21.71*	0.000	4
4.	Delivering knowledge to whose concerns is a continuous process.	8.29	1.61	82.89	26.24*	0.000	2
	All items of the field	8.24	1.36	82.45	30.42*	0.000	

Table (14)- Transfer

* The mean is significantly different from 5.5

2.4 Application

Table (15) shows item “Knowledge’s application leads to competitive advantage” was ranked first by having the highest proportional mean valued 83.60%, where item “You can make you of the knowledge and turn it to products or services” was ranked fourth by having the lowest proportional mean valued 75.00%. In general, the items of the “Application” were statistically high with a proportional mean valued 80.68%.

This result agrees with (Sanguankaew & Ractham, 2019) who confirmed that applying knowledge is to put knowledge into practice leading to competitive advantage. In addition, the findings supports (John & Spender, 2015) who said that knowledge application in China is not only about putting knowledge into application, but also arising questions form knowledge perspective.

	Item	Mean	S.D	Proportional Mean (%)	Test value	P-value (Sig.)	Rank
1.	You can make you of the knowledge and turn it to products or services.	7.50	2.04	75.00	14.80*	0.000	4
2.	You care to apply what you know in the workplace.	8.28	1.63	82.76	25.67*	0.000	2
3.	Applying what you know is an inevitable result.	8.14	1.65	81.36	24.19*	0.000	3
4.	Knowledge’s application leads to competitive advantage.	8.36	1.62	83.60	26.64*	0.000	1
	All items of the field	8.07	1.43	80.68	27.13*	0.000	

Table (15)- Application

* The mean is significantly different from 5.5

Knowledge management

Table (16) shows the mean of all items equals 8.19 (81.88%), Test-value = 35.07 and P-value =0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean is significantly greater than the hypothesized value 5.5. It is concluded that the respondents agreed to “Knowledge management”. The positive result agrees with the literature of KM emphasizing its four process: creation, storage and retrieval, transfer and application like, (Sanguankaew & Ractham, 2019) and (John & Spender, 2015).

Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
Creation	8.28	1.31	82.83	32.07*	0.000	1
Storage and retrieval	8.10	1.32	81.04	29.73*	0.000	3
Transfer	8.24	1.36	82.45	30.42*	0.000	2
Application	8.07	1.43	80.68	27.13*	0.000	4
All Items of knowledge management	8.19	1.16	81.88	35.07*	0.000	

Table (16)- Knowledge management

*The mean is significantly different from 5.5

Research Hypothesis

1. There is a statistically significant relationship at level $\alpha \leq 0.05$ between workforce agility, and knowledge management.

To test this hypothesis, the Pearson correlation coefficient was used and the following table illustrates this.

Table (17) shows that the correlation coefficient between workforce agility and knowledge management equals 0.744 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. It is concluded that there is a significant relationship between workforce agility and knowledge management.

This result supports the theoretical framework of (Almahamid, 2018) which hypnotized the existing of the relationship between workforce agility and knowledge management (process). On the other hand, this study proves the theory and assures the relationship between WFA and KM, but it differs in accordance to the sub-variables.

In addition, (Carvalho, Sampaio, Rebentisch, Carvalho, & Saraiva, 2017) explained that workforce is "crucial" to apply agility and KM is one of organizational agility enablers. Consecutively, workforce agility is a main element to reach organizational agility (Sherehiy & Karwowski, 2014) As a result, the above finding clarifies and reinforces the relationship between WFA and KM.

		Creation	Storage and retrieval	Transfer	Application	Knowledge management
Proactivity	R	.499*	.351*	.472*	.470*	.525*
	(Sig.)	0.000	0.000	0.000	0.000	0.000
Flexibility and adaptability	R	.532*	.328*	.488*	.446*	.530*
	(Sig.)	0.000	0.000	0.000	0.000	0.000
Resilience	R	.601*	.526*	.483*	.528*	.632*
	(Sig.)	0.000	0.000	0.000	0.000	0.000
Competence	R	.689*	.677*	.653*	.674*	.787*
	(Sig.)	0.000	0.000	0.000	0.000	0.000
HR agility	R	.696*	.559*	.638*	.639*	.744*
	(Sig.)	0.000	0.000	0.000	0.000	0.000

Table (17)- Correlation coefficient between workforce agility, and knowledge management

* Correlation is significant at the 0.05 level

2. There is a statistically significant impact at level $\alpha \leq 0.05$ of workforce agility on knowledge management.

To test this hypothesis, the Multiple Linear Regression Model was used, and the following table illustrates this.

The Multiple correlation coefficient $R = 0.820$ and $R\text{-Square} = 0.667$. This means 66.7% of the variation in knowledge management is explained by all of the independent variables together " Proactivity, Flexibility and adaptability, Resilience and Competence".

-The Analysis of Variance for the regression model. $F=114.611$, p-value (Sig.) less than 0.05, so there is a significant relationship between the dependent variable knowledge management and the independent variables "Proactivity, Flexibility and adaptability, Resilience and Competence".

-For the variable "Proactivity ", the t-test =0.622, the P-value (Sig.) more than 0.05, hence this variable is statistically in significant. Then there is in significant effect of the variable Proactivity on knowledge management. This result disagrees with (Sherehiy, Karwowski, & Layer, 2007) who said that the process of KM facilitates employees' proactivity, adaptability and resilience.

-For the variable " Flexibility and adaptability ", the t-test =1.715, the P-value (Sig.) less than 0.05, hence this variable is statistically significant. Since the sign of the test is positive, then there is significant positive effect of the variable flexibility and adaptability on knowledge management. This supports (Almahamid, 2018) who confirmed that the new developed K makes the employee to "modify" the behavior adapting the changing surroundings.

-For the variable "Resilience ", the t-test =3.924, the P-value (Sig.) less than 0.05, hence this variable is statistically significant. Since the sign of the test is positive, then there is a significant positive effect of the variable resilience on knowledge management. In this study of (Almahamid, 2018), the researcher studied WFA and KM theoretically expressing that resilience is a behavior that relies on adaptability and proactivity in which the result of this study agrees with it when it comes of adaptability ,but disagrees with proactivity. Resilience, as a workforce agility's variable, and KM is still under study; however, this finding supports (Almahamid, 2018)'s hypothesis of possible relationship between KM process (Creation/Acquisition, Sharing, and Application) and resilience, as a behavior.

For the variable "Competence ", the t-test =11.509, the P-value (Sig.) less than 0.05, hence this variable is statistically significant. Since the sign of the test is positive, then there is significant positive effect of the variable competence on knowledge management. This outcome goes along with (Almahamid, 2018) who empathized that K

creation, one of KM process, enhances agile behaviors like, possessing multi competences, adaptability and proactivity and resilience.

Variable	B	T	Sig.	R	R-Square	F	Sig.
(Constant)	1.139	3.247	0.001	0.820	0.667	114.611**	0.000
Proactivity	0.038	0.622	0.534				
Flexibility and adaptability	0.078	1.715*	0.044				
Resilience	0.175	3.924*	0.000				
Competence	0.567	11.509*	0.000				

* The variable is statistically significant at 0.05 level

** The relationship is statistically significant at 0.05 level

Conclusions

The study comes into the following conclusion:

1. There is a male domination between the academic staff of IUG and AUG with 85.1 % between the respondents reflecting the social restrictions on women's professional life as known by Glass ceiling.
2. Proactivity is a significant component of HR agility. The respondents show positive reaction towards proactivity's characteristics, but they show the opposite towards the characteristic of "curiosity". This reflects the social and religious perspectives of "curiosity".
3. Flexibility and adaptability is significant component of HR agility. The respondents show that they are flexible and adaptable to different cinereous.
4. Resilience is a significant component of HR agility. The respondents show that they can work under stress and deal with unexpected circumstances.
5. Competence is a significant component of HR agility. The respondents can understand and deal with newly work's procedures, knowledge, ideas and technologies.
6. The combination of proactivity, flexibility and adaptability, resilience and competence creates an agile employee.
7. K creation is an important component of knowledge management. The respondents show that they can make use of the old K and create new one to be innovative. Also, they can translate their actions, attitudes, emotions and behavior into clear K.
8. K Storage and retrieval is an important component of knowledge management. The respondents show that they can save k and restore it after a while of saving it.
9. K Transfer is an important component of knowledge management. The respondents show that they can deliver the needed K and information to whose needs them.
10. K application is an important component of knowledge management. The respondents show that they can make use of their K in a shape of services to the academic field.
11. The combination of K creation, K Storage and retrieval, K Transfer and K application process an employee the skill of K management.
12. There is a significant relationship between workforce agility and knowledge management.
13. There is a statistically significant impact at level $\alpha \leq 0.05$ of workforce agility on knowledge management.
14. There is a significant positive effect of the variables (flexibility and adaptability, resilience and competence) on knowledge management.
15. There is an insignificant effect of the variable proactivity on knowledge management.

Recommendations

Upon the above outcomes, these are some recommendations to enhance both workforce agility and knowledge management:

- 1- Further studies are still needed to explore the effect of WFA on KM more deeply in different contexts.
- 2- More independent studies are needed to explore the effect of proactivity on knowledge management.
- 3- It is recommended for IUG and AUG to recruit more females to add variety in accordance of knowledge and experiences.
- 4- It is recommended for IUG and AUG to introduce the recent HR characteristics to their employees that are needed and required in the changeable environment.

- 5- A connection is recommended between business and management and other departments department in both IUG and AUG in order to enhance the employees' quality, connection and harmony in accordance to HR's requirements.

Works Citation

- Almahamid, S. (2018). Knowledge Management Processes And Workforce Agility: A Theoretical Perspective. *International Journal of Management and Applied Science*.
- Arpaci, I., Al-Emran, M., & Al-Sharafi, M. A. (2020). The impact of knowledge management practices on the acceptance of Massive Open Online Courses (MOOCs) by engineering students: A cross-cultural comparison. *Telematics and Informatics*.
- Azmy, A. (2021). The Effect Of Employee Engagement And Job Satisfaction On Workforce Agility Through Talent Management In Public Transportation Companies. *Media Ekonomi dan Manajemen*, 212-229.
- Baláž, V., Williams, A. M., Moravčíková, K., & Chrančoková, M. (2019). What competences, which migrants? Tacit and explicit knowledge acquired via migration. *Journal of Ethnic and Migration Studies*.
- Braun, T. J., Hayes, B. C., Frautschy DeMuth, R. L., & Taran, O. A. (2017). The Development, Validation, and Practical Application of an Employee Agility and Resilience Measure to Facilitate Organizational Change. *Industrial and Organizational Psychology*, 702–722.
- Canonico, P., Esposito, V., De Nito, E., Iacono, M. P., & Consiglio, S. (2019). Knowledge creation in the automotive industry: Analysing obeya-oriented practices using the SECI model. *Journal of Business Research*.
- Carvalho, A. M., Sampaio, P., Rebentisch, E., Carvalho, J. Á., & Saraiva, P. (2017). Operational excellence, organisational culture and agility: the missing link? *Total Quality Management & Business Excellence*.
- Das, K., Mukhopadhyay, S., & Suar, D. (2022). Enablers of workforce agility, firm performance, and corporate reputation. *Asia Pacific Management Review*.
- Frankenfield, J. (2022, December 27). *Descriptive Analytics: What They Are and Related Terms*. Retrieved: 10/05/2023, from <https://www.investopedia.com/terms/d/descriptive-analytics.asp>
- John, W. W., & Spender, C. (2015). Domains and opportunities in knowledge and aerospace management in China: An integrative perspective. *Chinese Management Studies*, 473 - 481.
- Kaur, H. (2015). Knowledge Creation And The Seci Model. *International Journal Of Business Management*.
- Krylova, K., Vera, D., & Crossan, M. (2016). Knowledge transfer in knowledge-intensive organizations: the crucial role of improvisation in transferring and protecting knowledge. *Journal of Knowledge Management*, 1045-1064.
- Munteanu, A.-I. (2019). A Review Of Organizational Agility Concept And Characteristics. *Annals of the University of Oradea, Economic Science Series*, 335-341.
- Munteanu, A.-I., Bibu, N., Nastase, M., Cristache, N., & Matis, C. (2020). Analysis of Practices to Increase the Workforce Agility and to Develop a Sustainable and Competitive Business. *Sustainability*.
- Patil, M., & Suresh, M. (2017). Modelling the Enablers of Workforce Agility in IoT Projects: A TISM Approach. *Global Journal of Flexible Systems Management*.
- Petermann, M., & Zacher, H. (2022). Workforce Agility: Development and Validation of a Multidimensional Measure. *Front. Psychol.*
- Prusak, R. (2019). Analysis of selected elements of knowledge management in the context of the size of the enterprise and the specifics of its activity. *Management*, 90–104.
- Qin, R., & Nembhard, D. A. (2015). Workforce agility in operations management. *Surveys in Operations Research and Management Science*, 55-69.
- Saeed, I., Khan, J., Zada, M., Ullah, R., Vega-Muñoz, A., & Contreras-Barraza, N. (2022). Towards Examining the Link Between Workplace Spirituality and Workforce Agility: Exploring Higher Educational Institutions. *Psychology Research and Behavior Management*.

- Sanguankaew, P., & Ractham, V. V. (2019). Bibliometric Review of Research on Knowledge Management and Sustainability, 1994–2018. *Sustainability*.
- Sarayreh, B., Mardawi, A., & Dmour, R. (2012). Comparative Study: The Nonaka Model of Knowledge Management. *International Journal of Engineering and Advanced Technology*.
- Sherehiy, B., & Karwowski, W. (2014). The relationship between work organization and workforce agility in small manufacturing enterprises. *International Journal of Industrial Ergonomics*, 466-473.
- Sherehiy, B., Karwowski, W., & Layer, J. K. (2007). A review of enterprise agility: Concepts, frameworks, and attributes. *International Journal of Industrial Ergonomics*, 445–460.
- Storme, M., Suleyman, O., Gotlib, M., & Lubart, T. (2020). Who is agile? An investigation of the psychological antecedents of workforce agility. *Global Business and Organizational Excellence*, 28-38.
- Sulistiawan, J., Moslehpour, M., Diana, F., & Lin, P.-K. (2022). Why and When Do Employees Hide Their Knowledge? *Behavioral Sciences*.
- Tamtam, F., & Tourabi, A. (2020). Agile workforce assessment: Manufacturing companies cases. *2020 5th International Conference on Logistics Operations Management (GOL)*. Rabat, Morocco: IEEE.
- Tessarini Junior, G., & Saltorato, P. (2021). Workforce Agility: A systematic Literature Review and a Research Agenda Proposal. *Innovar*.
- Tessarini, G., & Saltorato, P. (2021). Workforce Agility: A systematic Literature Review and a Research Agenda Proposal. *Innovar*.
- von Krogh, G., Nonaka, I., & Rechsteiner, L. (2012). Leadership in Organizational Knowledge Creation: A Review and Framework. *Journal of Management Studies*.
- Yee, Y. M., Tan, C. L., & Thurasamy, R. (2019). Back to basics: building a knowledge management system. *Strategic Direction*.