INDIVIDUAL'S CREATIVITY: INSTRUMENT ASSESSMENT AND VALIDATION IN THE CONTEXT OF MALAYSIAN HIGHER LEARNING INSTITUTION

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Abstract: *The organizations have been forced to develop methods for improving their performance to achieve a competitive advantage in the market by the ever-increasing competition worldwide. Higher Education Institutions (HEIs) are no exception. The previous studies showed that there are contradicting findings between organizational culture versus individual creativity. Therefore, this study is conducted to explore the factors influencing individual creativity focusing on Higher Education Institutions in Malaysia. Hence, the objectives of this study are (1) to investigate the level of individual creativity among academician in Malaysia and (2) to investigate the relationship between individual creativity and its predictors (adhocracy culture, clan culture, market culture, and hierarchy culture) among academician in Malaysia. Based on the previous research, the predictors and dependent variables were adopted. Then, a pilot study was conducted. In order to validate the instrument, the expert review process was conducted. The face validity and reliability investigation of possible respondents was completed. As a result, an instrument with five variables and 71 items was created to measure individual creativity in the context of Higher Education Institutions (HEIs).*

Keywords: *Individual creativity, adhocracy culture, market culture, clan culture, hierarchy culture.*

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Introduction

Creativity in general is thought to be the initial step towards inventions, such as product and process innovation, emphasizing originality and efficacy in problem resolution, besides a deliberate strategy to foster friendly, psychologically supportive interactions and a conducive environment that encompasses transformational and servant leadership (Antonio et al., 2022). Various studies on creativity in higher education institutions highlight the multidimensional ideas that focus on individual creativity that are critical to encouraging innovation and flexibility in academic contexts, which relate to the individual's ability to generate unique and inventive ideas, products, or solutions. Those studies emphasize the necessity of recognizing and cultivating individual creativity to improve teaching-learning outcomes and related tasks and the growing issues that higher education institutions face across various faculties and academic programs instead of only in arts programs that promote creative culture (Beaulieu, 2022). The development of educator's creativity in the educational process can also ensure the effective implementation of the managerial strategy for the mass development of the creative potential students which in turn, ensures the future labour market to be filled with specialists with a high level of creative abilities and motivation to achieve high results in self-development in which indirectly encourages the development of the organization as a whole (Burayeva et al., 2020).

Since individual creativity at higher education institutions is critical for driving discovery, innovation, and adaptability, the creativity culture at the organizational level needs to be nurtured in creating an atmosphere for students and faculty members, as well as the management to experiment with new ideas, find creative solutions, and make important contributions to the academic community and beyond. Therefore, the goal of this study is to develop and validate a research instrument for measuring an individual's creativity in the setting of Malaysian higher education institutions by investigating the determinants of an individual's creativity focusing on four identified dimensions covering adhocracy culture, clan culture, market culture, and hierarchy culture.

Literature Review

Creativity

The concept of creativity has evolved over time and has been studied in various fields, including arts, business, psychology, education and others. Researchers have explored different aspects of creativity, such as its roles, components and factors which influence creative thinking. The term "creativity" comes from the Latin word *creare*, which means to create or to make ("Creativity," 2021). These meanings emphasize how creativity is essentially a generative process, aligned with Birla (2013) view that it is the process of generating ideas to help organizations become more competitive in the marketplace. Creativity is defined as the ability to generate novel and valuable ideas, solutions, or outcomes that are unique, meaningful, and have practical applications (Amabile, 2020). In addition, creativity is also described as the ability to improve. In general, people are gifted with a natural ability that allows us to be innovative, inventive, and always looking for ways to improve things, such as when solving problems and planning reforms. In terms of the development of creativity, although individuals are naturally creative as children, this ability tends to decline with age. Nonetheless, it is believed that people can revive and utilize their creativity through personal efforts and by drawing inspiration from others (Dobbins & Pettman, 1997).

According to Sheffield (2019), creativity is an essential early stage of the innovation process, and it is important for organizations to think of creativity as a necessary subset of the more complex innovation process. Additionally, creativity is also required and important for problem-solving and decision-making across departments. In a higher education setting, creativity among key players is critical for creating a dynamic learning environment including for curriculum development, instructional design, and the implementation of innovative teaching methods. Based on the Creativity Support Index, creativity includes a variety of elements like experimentation, expressiveness, enjoyment, immersion, teamwork, and outcomes worth the effort (Carroll et al., 2009). These components show how diverse creativity is and how crucial it is to the success of organizations. By acknowledging these components, organizations can foster a creative and dynamic atmosphere where individual ideas are welcomed, teamwork is appreciated, and significant results are produced. Many industries have recognized the importance of creativity in today's competitive world. In response, companies are increasingly valuing leaders who can deal with uncertainty and make their organizations more flexible and efficient (Zhou et al., 2024). Any organization that wants to be successful should recognize and embrace creativity in order to stay competitive and relevant. Nevertheless, for the management of an organization, fostering creativity is not an easy task as it comes with various challenges such as resistance to change, insufficient resources within the organization and cultural differences (Hermida et al., 2019).

Culture

Culture can be defined as acquired knowledge, functional in a certain environment and shared by a certain group of people to effectively deal with the environment and with each other and culture is another important influence on individual creativity (Güss et al., 2010). According to Hermida et al. (2019) in their short review showed that employees' creativity can be fostered by specific individual, organizational and cultural factors where these findings have implications for management and organizational psychology. Chua et al. (2015) hypothesized that creativity in the organization is depending on cultural stiffness such as strong social standards and having a low tolerance for different behavior. These findings recommend that culturally loose countries have a benefit when dealing creatively with novel tasks in the global market compared to members of culturally tight countries (Chua et al., 2015). However, it should be noted that members of a constricted culture were still able to achieve creatively only if they worked with individuals from their own or culturally close countries (Chua et al., 2015).

Increasingly, the importance of organizational culture in upbringing creativity is gradually being felt in educational institutions as well (Towndrow et al., 2010). Difference to a non-controlling leadership style, there is no relationship between organizational learning culture and employee creativity, which was unexpected, considering the significant discussion in the literature explaining on and theorizing about their positive association and organizational learning culture also unsuccessful to have important interaction effects with area expertise and creative personality influencing employee creativity (Jeong et al., 2017). Organizational culture is also thoroughly related to the creativity of individuals (Sun et al., 2023). These results specify that facing cultural differences and processing differing perspectives through social interactions rather than superficial encounters with other cultures broaden an individual's knowledge and increase creativity (Gocłowska & Crisp, 2014).

Organizational Culture

Organizational creativity refers to the novelty, originality, and usefulness of a new creative venture's outputs, including products, services, processes, and procedures (Amabile & Pratt, 2016). According to the componential theory of creativity (Amabile, 2020), there are four components which influence creativity. Three components consisting of domain-relevant skills, creativity-relevant processes and task motivation are within individuals. Another component is the outside individual which is the organization's social environment. Therefore, organizational creativity is related to the novelty and usefulness of business outcomes. People who work together in the complex social system will generate specific capabilities in order for them to deal with a complex environment. Dziallas and Blind (2019) in their article as organizations need to develop their organizational structures to enable innovative processes and to utilize creativity at the organizational level. Chen et al. (2021) from their study showed that the relationship of leadership and task characteristic in SMU context has no significant effect on employee creativity, which is conflicting with previous offline findings which suggested that the interaction of leadership and task characteristic has a positive effect on employee creativity (Zhang & Zhou, 2014). Organizational creativity and innovation can be increased if management can integrate all the skills that they have in their organizations. Song et al. (2019) found that creativity-oriented HRM systems are positively related to organizational creativity through innovative culture. Furthermore, customer orientation strengthens the effect of innovative culture on organizational creativity.

Perceived Creativity

Creativity and innovation are critically important for organizations seeking to survive and thrive in today's business environments. According to Yeh-Yun Lin and Liu (2012), the different culture in organizations that make perceived innovation has not fully been affected by the freedom, conservatism, organizational internal conflict, and also workload pressure. A creative employee generates ideas that are useful to the organization's products, practices or methods. Gelaidan et al. (2022) from their research found that transformational, transactional and servant leadership styles appear to psychologically empower to the public servants, and perhaps it resulting in the exertion of increased creative and innovative behavior when forming a creative and innovative sense of capacity as psychological empowerment plays a significant mediating role in these effects. Lei et al. (2021) found that employees will respond to their creativity both at the individual and team level when they regard their leaders as being authentic creators and innovative in organizations. Their willingness to engage in creative activities are influenced by their perception regarding the leader's authenticity.

Houghton and DiLiello (2010) from their study shows that adult leadership development activities are giving the big impact to the perceived organizational support for creativity and participation in youth development activities during childhood also help the organizational member to perceive opportunities in which they can apply their skills even if they are facing many obstacles in the organizations. Nawaz et al. (2018) in their study, found out that employees provided with training will get more sense of concern from the organization and help motivate them to become more creative. It shows that there is a positive link between the training and employee creativity. Creative employees also help to identify any opportunities such as new products, find new alternatives or methods or technology, in order to generate, apply and implement practical work-related solutions and also work on their implementation of what they have learnt during the training (Gumusluoglu & Ilsev, 2009). According to Rodrigues et al. (2019), to increase the millennial entrepreneurial business performance in organizations, it is important for the employees to have a self-perceived creativity and belief in and people

who are less creative might not interested with entrepreneurship as they believe their skills and treats do not match the business profile. Employee's creativity serves as an important element for innovation. Group and organizational innovation are contributed by the individual's capabilities in which they generate new and useful ideas (Ghosh, 2015).

Methodology

The study adopted the instrument validation method using Context Validity Index (CV-i) as suggested from previous studies (Almanasreh et al., 2022; Polit & Beck, 2006; Rosman, Ismail, & Masrek, 2022; Rosman, Razlan, et al., 2022). Content Validity index (CV-i) is used to determine the reliability of an instrument based on two perspectives: content relevance and content clarity. According to Erfanmanesh et al. (2012) and Mohamad Rosman et al. (2021) instrument validation process should start based on the following steps:

    a.   Identify predictors, mediator/moderator, and/or impact
    b.   Instrument Development
    c.   Expert Validation
    d.   Content Validity Index
    e.   Face Validity and Reliability

Identify predictors, mediator/moderator, and/or impact

The first step to identify predictors, mediator/moderator, and/or impact is via Structured Literature Review (SLR) Process. This study adopted the work of Rosman et al. (2019) and Webster and Watson (2002). According to Webster and Watson (2002), process of identifying relevant literature will start with a leading journals; next backward and forward search should be conducted to identify relevant supporting literature. For the purpose of the study, the literature was collected from several leading databases such as Web of Science, Scopus, IEEE Explore, ProQuest, and Emerald.

Instrument Development

Based on the SLR process, the instrument was developed by adapting and adopting the previous similar studies as shown in Table 1. A Total of 73 items were formulated and adopted from similar studies of (Brayfield & Rothe, 1951; Indriartiningtias et al., 2019; Kern et al., 2014; Kim S. Cameron, 2011; McPhail et al., 2015).

Table 1: Sources of Instrument

Dimension	Variable	Number of Items	Source
Adhocracy Culture	Managing Innovation	5	(Kim S. Cameron, 2011)
	Managing the future	5	
	Managing Continuous Improvement	4	
Clan Culture	Managing teams	4	
	Managing interpersonal relationship	5	
	Managing the development of others	5	
Market Culture	Managing competitiveness	3	
	Energizing employees	5	
	Managing customer service	5	
Hierarchy Culture	Managing acculturation	4	
	Managing the control system	3	
	Managing coordination	2	

Individual Creativity	Job Satisfaction	6	(Brayfield & Rothe, 1951)
	Sense of Accomplishment	7	(Kern et al., 2014)
	Perceived Creativity	6	(Indriartiningtias et al., 2019)
	Knowledge Creation	4	

Once variables and items has been ascertained, the next step is to continue with the instrument development. There are 7 sections of the instrument. The first section explained the purpose of the study, as well as ethical clearance obtained before proceeding with the study. In the second section, the study collects respondent's demographic details in terms of gender, age, academic qualification, academic position, teaching experience, number of subordinates, grade increment period, and performance assessment. The next subsequent section collects participant's perceptual measure using Likert scale for the predictors, namely adhocracy culture, clan culture, market, culture, and hierarchy culture. In the last section, the study investigates participants perception on individual creativity as response to the mentioned predictors. The following Table 2 summaries the overall structure of the questionnaire.

Table 2: Instrument Content Development

Section	Content
Section A	• Introduction to the research • Ethic Statement
Section B (Demographic Information)	• Gender, Age, Qualification, Academic Position, Teaching Experience, Number of Subordinate, Grade Increment Period, Performance
Section C (Adhocracy Culture)	• Managing Innovation • Managing the future • Managing Continuous Improvement
Section D (Clan Culture)	• Managing teams • Managing interpersonal relationship • Managing the development of others
Section E (Market Culture)	• Managing competitiveness • Energizing employees • Managing customer service
Section F (Hierarchy Culture)	• Managing acculturation • Managing the control system • Managing coordination
Section G (Individual Creativity)	• Job Satisfaction • Sense of Accomplishment • Perceived Creativity • Knowledge Creation

Expert validation

A completed instrument will be submitted to an expert reviewer. The purpose of this process is to confirm the suitability of the variables selected for the studies. This process also enables the researcher to confirmed that the items developed does measure the selected variables. The selection of reviewers is based on certain criteria. First, they must have wide knowledge on the

subject matter. Second, the reviewers must have a minimum of 5 years of experience in academic setting. Third, the reviewers must have at a Master/Advanced Degree as their minimum level of education.

Face validity and reliability analysis

Next, face validity will be conducted with the proposed respondents. The expected respondent for this study is an academic lecturer from Malaysian context. The purpose of face validity is to determine whether user understand the items selected for the study, as well as to improve the response rate via the development of user-friendly instrument. Once face validity is completed, a reliability test will be conducted to determine whether the instrument is reliable for the actual data collection process.

Findings and Discussion

Expert review profiles

A total of 5 reviewers were selected for the expert review process. All expert has a minimum education of doctorate degree and possess more than 10 years of academic experience. Moreover, 4 of them are now employed as senior lecturer, while 1 respondent employed as Associate Professor at local university in Malaysia. All experts are given 2 weeks to complete their task – with further 2 weeks extension if necessary. The research team also assisted the expert review process via online through Google Meet and WhatsApp to help the reviewer become accustomed to study details. All expert evaluation form were returned approximately in 4 weeks; indicating a 100% response rate from the expert review process.

Content Validity Index

Polit and Beck (2006) Content Validity Index (CV-i) was used to determine the validity of the instrument. Content Validity measure instrument in relation to content relevance and content clarity. The following Table 3 shows the result of Content Validity Assessment for the study. Based on the results, only two items received an indicator of less than 3; indicating a sufficient and excellent instrument development process. Both i-CVI and S-CVI/UA for content clarity and content relevance shows a value of 0.98 and 0.97.

Table 3: Content Clarity and Content Relevance

Dimensions	i-CVI	S-CVI/UA
Content Clarity	0.98	0.97
Content Relevance	0.98	0.97

Face validity and reliability

Next, face validity was conducted with the prospective respondents. A total of 5 respondents were selected from one of the local universities in Malaysia. The respondents will be removed from the actual data collection process. The respondents were given the completed instrument and guidance was also provided by the project team. As a result of face validity, no additional modification has been suggested as all respondents agreed that the instrument is sufficient and comprehensible. Following the completion of face validity, a pilot study was conducted to determine the reliability of the instrument. The following Table 4 shows the result of reliability analysis. Based on the results, 2-items were removed from the final instrument due to low reliability score. Other items were accepted as they exceed the minimum value of 0.7 as suggested by Nunnally (1978).

Table 4: Reliability Analysis

Dimension	Variable	Number of Items	Cronbach's Alpha
Adhocracy Culture	Managing Innovation	5	0.755
	Managing the future	5	0.884
	Managing Continuous Improvement	4	0.883
Clan Culture	Managing teams	4	0.845
	Managing interpersonal relationship	5	0.729
	Managing the development of others	5	0.894
Market Culture	Managing competitiveness	3	0.829
	Energizing employees	5	0.923
	Managing customer service	5	0.811
Hierarchy Culture	Managing acculturation	4	0.981
	Managing the control system	3	0.865
	Managing coordination	2	-0.340
Individual Creativity	Job Satisfaction	6	0.897
	Sense of Accomplishment	7	0.927
	Perceived Creativity	6	0.924
	Knowledge Creation	4	0.859

The following Table 5 shows the final instrument of the study. A total of 71 items were deemed sufficient for the final instrument.

Table 5: Final Instrument

#	Code	Item
1	MAI1	I assure that regular reports and assessments occur in my faculty.
2	MAI2	I encourage others in my faculty to generate new ideas and methods.
3	MAI3	When someone comes up with a new idea, I help sponsor them to follow through on it.
4	MAI4	I generate, or help others obtain, the resources necessary to implement their innovative ideas.
5	MAI5	I create an environment where experimentation and creativity are rewarded and recognized.
6	MAF1	I articulate a clear vision of what can be accomplished in the future.
7	MAF2	I constantly restate and reinforce my vision of the future to members of my faculty.
8	MAF3	I help others visualize a new kind of future that includes possibilities as well as probabilities.
9	MAF4	I have developed a clear strategy for helping my faculty successfully accomplish my vision of the future.
10	MAF5	I capture the imagination and emotional commitment of others when I talk about my vision of the future.
11	MAC1	I am always working to improve the processes we use to achieve our desired output.
12	MAC2	I encourage everyone in my faculty to constantly improve and update everything they do.

#	Code	Item
13	MAC3	I encourage all staff to make small improvements continuously in the way they do their jobs.
14	MAC4	I initiate cross-functional teams or task forces that focus on important organizational issues.
15	MAT1	I build cohesive, committed teams of people.
16	MAT2	I facilitate effective information sharing and problem solving in my group.
17	MAT3	In groups I lead, I make sure that sufficient attention is given to both task accomplishment and interpersonal relationships.
18	MAT4	When leading a group, I ensure collaboration and positive conflict resolution among group members.
19	MAN1	I communicate in a supportive way when people in my faculty share their problems with me.
20	MAN2	I give my subordinates regular feedback about how I think they're doing.
21	MAN3	When giving negative feedback to others. I foster their self-improvement rather than defensiveness or anger.
22	MAN4	I listen openly and attentively to others who give me their ideas, even when I disagree
23	MAN5	I foster trust and openness by showing understanding for the point of view of individuals who come to me with problems or concerns.
24	MAD1	I regularly coach subordinates to improve their management skills so they can achieve higher levels of performance.
25	MAD2	I make sure that others in my faculty are provided with opportunities for personal growth and development.
26	MAD3	I give others assignments and responsibilities that provide opportunities for their personal growth and development.
27	MAD4	I actively help prepare others to move up in the organization.
28	MAD5	I facilitate a work environment where peers as well as subordinates learn from and help develop one another.
29	MCO1	I regularly come up with new, creative ideas regarding processes, products, or procedures for my faculty
30	MCO2	I increase the competitiveness of my faculty by encouraging others to provide services and /or products that surprise and delight stakeholders by exceeding their expectations.
31	MCO3	I am able to manage competitiveness (fostering an aggressive orientation toward exceeding other educational institutions performance)
32	ENE1	I provide experiences for subordinates that help them become socialized and integrated into the culture of our faculty.
33	ENE2	I have established a control system that assures consistency of quality in my faculty.
34	ENE3	I have established a control system that assures consistency of service in my faculty.
35	ENE4	I have established a control system that assures consistency of cost in my faculty.
36	ENE5	I have established a control system that assures consistency of productivity in my faculty.
37	MCU1	I have consistent and frequent personal contact with my internal and my external stakeholders (students, community,etc)

#	Code	Item
38	MCU2	I assure that everything we do is focused on better serving our stakeholders (students, community,etc).
39	MCU3	I constantly monitor the strengths and weaknesses of other educational institutions and provide my faculty with information on how we measure up.
40	MCU4	I make sure that my faculty continually gathers information on our stakeholders needs and preferences
41	MCU5	I involve stakeholders in planning and evaluations
42	MAA1	I make certain that all staff are clear about our policies.
43	MAA2	I make certain that all staff are clear about our values.
44	MAA3	I make certain that all staff are clear about our objectives.
45	MAA4	I make certain that others have a clear picture of how their job fits with others in the organization.
46	MCS1	I keep close track of how my faculty is performing.
47	MCS2	I foster rational, systematic decision analysis in my faculty (e.g., logically analyzing component parts of problems) to reduce the complexity of important issues.
48	MCS3	I maintain a formal system for gathering and responding to information that originates in other faculty outside my own.
49	JSA1	I feel real enjoyment in my work.
50	JSA2	I feel fairly satisfied with my job
51	JSA3	Where I work I am satisfied with the personal interest people take in one another
52	JSA4	I am satisfied with the opportunities I have to develop close friendships with the people I work with
53	JSA5	I am satisfied with the opportunities in my job to use initiatives in performing tasks
54	JSA6	I am satisfied with how my job allows me to make a contribution towards achieving workplace goals
55	SOA1	I think I am doing pretty well.
56	SOA2	Most days I feel a sense of accomplishment from what I do.
57	SOA3	I am competent in the activities that are important to me.
58	SOA4	I am capable in the activities that are important to me.
59	SOA5	I am competent in my daily activities.
60	SOA6	I am capable in my daily activities.
61	SOA7	I am doing just as well as my peers.
62	PCR1	My creativity emerges when given the opportunity
63	PCR2	I can develop appropriate plans and schedules for the implementation of new ideas
64	PCR3	I have innovative new ideas
65	PCR4	I have high curiosity
66	PCR5	I have high technical expertise in every field
67	PCR6	I always come up with creative solutions to problems in the organization
68	KNC1	There is a frequent direct interaction with stakeholders
69	KNC2	There are activities around the organization to obtain new information
70	KNC3	There is a dialogue process with other educational institutions
71	KNC4	There is interaction with experts from outside the organization

Discussion and Conclusion

Experts from diverse disciplines emphasize the importance of paying significant attention to nurturing creative capabilities across different educational tiers, with particular emphasis on higher education (de Alencar & de Oliveira, 2016). Assessing and validating individual creativity within the context of Malaysian higher learning institutions (HLIs) is a critical endeavour that holds profound implications for both educational practices and societal advancement. The present study is conducted to develop and validate instruments for measuring the determinants of individual creativity in an organization focusing on Malaysian higher learning institutions (HLIs). There are four dimensions that were identified, which are adhocracy culture, clan culture, market culture and hierarchy culture. The instruments can be used to investigate the level of individual creativity among academicians in Malaysia. A series of steps were conducted which are instrument development, experts review, face validity, pilot study, and reliability analysis. Then, data collection will be conducted for further validation of the instruments. The expected audiences of this study are academicians. This research can be expanded by including other determinants.

The present study was conducted to develop and validate a valid instrument for investigating the determinants of an individual's creativity. There are four dimensions that were identified, which are adhocracy culture, clan culture, market culture and hierarchy culture. A series of steps were conducted; instrument development, experts review, face validity, pilot study, and reliability analysis. The next step of this study is to conduct a field data collection for further validation of the instrument. The expected respondents of the study are the academicians from the higher education institution in Malaysia. The future studies should focus on wider participants including the industry in order to investigate the individual's creativity in the organization. Another limitation is that this study only focuses on organizational culture which has been divided into four distinguished quadrants that are clan, adhocracy, market, and hierarchy. Future studies may enhance the model by including other factors or determinants.

Acknowledgments

References

Almanasreh, E., Moles, R. J., & Chen, T. F. (2022). A practical approach to the assessment and quantification of content validity. In *Contemporary research methods in pharmacy and health services* (pp. 583-599). Elsevier.

Amabile, T. M. (2020). Creativity, artificial intelligence, and a world of surprises. *Academy of Management Discoveries*, *6*(3), 351-354.

Amabile, T. M., & Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in Organizational Behavior*, *36*, 157-183. https://doi.org/https://doi.org/10.1016/j.riob.2016.10.001

Antonio, T., Indrianto, A. T. L., & Padmawidjaja, L. (2022). In search of mediators of leadership behavior to Team Creativity in Team Start-ups. *Frontiers in Psychology*, *13*, 951603.

Beaulieu, D. F. (2022). Creativity in science, engineering, and the arts: A study of undergraduate students' perceptions. *Journal of Creativity*, *32*(3), 100035.

Birla, M. (2013). *Unleashing creativity and innovation: Nine Lessons from nature for enterprise growth and career success*. John Wiley & Sons.

Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of applied*

psychology, *35*(5), 307.

Burayeva, Z., Berkimbayev, K., Kerimbayeva, B., Semiz, K., & Atikol, B. U. (2020). Creativity potential management in a higher education context. *International Journal of Educational Management*, *34*(9), 1439-1456.

Carroll, E. A., Latulipe, C., Fung, R., & Terry, M. (2009). Creativity factor evaluation: towards a standardized survey metric for creativity support. Proceedings of the seventh ACM conference on Creativity and cognition,

Chen, L., Zheng, B., Liu, H., & Deng, M. (2021). Three-way interaction effect of social media usage, perceived task interdependence and perceived participative leadership on employee creativity. *Internet Research*, *31*(2), 457-478.

Chua, R. Y., Roth, Y., & Lemoine, J.-F. (2015). The impact of culture on creativity: How cultural tightness and cultural distance affect global innovation crowdsourcing work. *Administrative Science Quarterly*, *60*(2), 189-227.

Creativity. In. (2021). *Oxford English Dictionary*.

de Alencar, E. M. L. S., & de Oliveira, Z. M. F. (2016). Creativity in Higher Education According to Graduate Programs' Professors. *Universal journal of educational research*, *4*(3), 555-560.

Dobbins, R., & Pettman, B. O. (1997). Self-development: the nine basic skills for business success. *Journal of management development*, *16*(8), 521-667.

Dziallas, M., & Blind, K. (2019). Innovation indicators throughout the innovation process: An extensive literature analysis. *Technovation*, *80*, 3-29.

Erfanmanesh, M., Abrizah, A., & Karim, N. H. A. (2012). Development and validation of the Information Seeking Anxiety scale. *Malaysian Journal of Library and Information Science*, *17*(1), 21-39.

Gelaidan, H. M., Houtgraaf, G., & Al-kwifi, O. S. (2022). Creativity and innovation in rapidly developing Qatar: the impact of leadership and the mediation of psychological empowerment amidst rapid growth. *International Journal of Public Sector Management*, *35*(3), 257-275.

Ghosh, K. (2015). Developing organizational creativity and innovation: Toward a model of self-leadership, employee creativity, creativity climate and workplace innovative orientation. *Management Research Review*, *38*(11), 1126-1148.

Gocłowska, M. A., & Crisp, R. J. (2014). How dual-identity processes foster creativity. *Review of General Psychology*, *18*(3), 216-236.

Gumusluoglu, L., & Ilsev, A. (2009). Transformational leadership, creativity, and organizational innovation. *Journal of business research*, *62*(4), 461-473.

Güss, C. D., Tuason, M. T., & Gerhard, C. (2010). Cross-National Comparisons of Complex Problem-Solving Strategies in Two Microworlds. *Cognitive Science*, *34*(3), 489-520.

Hermida, Y., Clem, W., & Güss, C. D. (2019). The inseparable three: how organization and culture can foster individual creativity. *Frontiers in Psychology*, *10*, 2133.

Houghton, J. D., & DiLiello, T. C. (2010). Leadership development: The key to unlocking individual creativity in organizations. *Leadership & Organization Development Journal*, *31*(3), 230-245.

Indriartiningtias, R., Subagyo, & Hartono, B. (2019). Creativity of small firms in creative industry: Initial evidence from Indonesia. *International Journal of Engineering Business Management*, *11*, 1847979019849135.

Jeong, S., McLean, G. N., McLean, L. D., Yoo, S., & Bartlett, K. (2017). The moderating role of non-controlling supervision and organizational learning culture on employee creativity. *European Journal of Training and Development*, *41*(7), 647-666. https://doi.org/10.1108/EJTD-03-2017-0025

Kern, M. L., Waters, L., Adler, A., & White, M. (2014). Assessing employee wellbeing in schools using a multifaceted approach: Associations with physical health, life satisfaction, and professional thriving.

Kim S. Cameron, R. E. Q. (2011). *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework* (3 ed.). Jossey-Bass.

Lei, S., Qin, C., Ali, M., Freeman, S., & Shi-Jie, Z. (2021). The impact of authentic leadership on individual and team creativity: a multilevel perspective. *Leadership & Organization Development Journal*, *42*(4), 644-662.

McPhail, R., Patiar, A., Herington, C., Creed, P., & Davidson, M. (2015). Development and initial validation of a hospitality employees' job satisfaction index: Evidence from Australia. *International Journal of Contemporary Hospitality Management*, *27*(8), 1814-1838.

Mohamad Rosman, M. R., Ismail, M. N., & Masrek, M. N. (2021). Investigating the predictors of digital library engagement: a structured literature analysis. *Pakistan Journal of Information Management and Libraries*, *22*, 60-82.

Nawaz, M., Bhatti, G. A., Ahmad, S., & Ahmed, Z. (2018). How can the organizational commitment of Pakistan railways' employees be improved? The moderating role of psychological capital. *Journal of Entrepreneurship, Management and Innovation*, *14*(1), 123-142.

Nunnally, J. C. (1978). *Psychometric Theory*. McGraw-Hill. https://books.google.com.my/books?id=WE59AAAAMAAJ

Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health*, *29*(5), 489-497.

Rodrigues, A. P., Jorge, F. E., Pires, C. A., & António, P. (2019). The contribution of emotional intelligence and spirituality in understanding creativity and entrepreneurial intention of higher education students. *Education+ Training*, *61*(7/8), 870-894.

Rosman, M. R. M., Ismail, M. N., & Masrek, M. N. (2022). Development and validation of a tool for measuring digital library engagement. *Int. J. Electr. Comput. Eng.(IJECE)*, *12*, 4146-4154.

Rosman, M. R. M., Ismail, M. N., Masrek, M. N., Branch, K., & Campus, M. (2019). Investigating the determinant and impact of digital library engagement: a conceptual framework. *Journal of Digital Information Management*, *17*(4), 215.

Rosman, M. R. M., Razlan, N. M., Shukry, A. I. M., Baharuddin, N. S., Rosli, N. N. I. N., & Alimin, N. A. (2022). Development and validation of instrument measuring referencing competencies and individual performance. AIP Conference Proceedings,

Sheffield, R. (2019). *How leaders learn to boost creativity in teams: Innovation catalysts*. World Scientific.

Song, Z., Gu, Q., & Wang, B. (2019). Creativity-oriented HRM and organizational creativity in China. *International Journal of Manpower*, *40*(5), 834-849. https://doi.org/10.1108/IJM-05-2016-0108

Sun, X., Lei, F., Wang, Y., & Ren, R. (2023). Collaborative networks, organizational culture, and the creativity of key inventors. *European Journal of Innovation Management*, *26*(6), 1721-1743.

Towndrow, P. A., Silver, R. E., & Albright, J. (2010). Setting expectations for educational innovations. *Journal of Educational Change*, *11*(4), 425-455. https://doi.org/10.1007/s10833-009-9119-9

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii-xxiii.

Yeh-Yun Lin, C., & Liu, F. C. (2012). A cross-level analysis of organizational creativity climate and perceived innovation: The mediating effect of work motivation. *European Journal of Innovation Management*, *15*(1), 55-76.

Zhang, X., & Zhou, J. (2014). Empowering leadership, uncertainty avoidance, trust, and employee creativity: Interaction effects and a mediating mechanism. *Organizational behavior and human decision processes*, *124*(2), 150-164.

Zhou, Y., Cheng, Y., Liu, G., Zhang, Z., & Zhu, H. (2024). How does empowering leadership promote employee creativity? The sequential mediating mechanism of felt obligation for constructive change and job crafting. *Journal of Vocational Behavior*, *148*, 103955.