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# A NEW IMPERATIVE OF RELATIONSHIP BETWEEN INDIVIDUAL CREATIVITY AND ORGANISATIONAL INNOVATION: A SYSTEMATIC REVIEW

(Imperatif Baharu Hubungan antara Kreativiti Individu dan Inovasi Organisasi: Suatu Ulasan Sistematik)

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*ABSTRACT*

Innovation is imperative for competitiveness and works as a critical breakthrough determinant for organisations' sustainable performance, while creativity functions as a catalyst for innovation processes or activities. One of the reasons for inadequate innovation is the lack of attention to creativity. Scholars have recently given a lot of attention to creativity by targeting individuals or employees but minimal systematic reviews were carried out on the correlation between organisational innovation and individual creativity. Hence, this article analysed the existing literature on the relationship between individual creativity and organisational innovation. We employed the PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) method of review, a methodical review of the Web of Science and Scopus repository and recognised 29 related studies. A more in-depth reviews of these articles produced five key themes and six sub-themes. We highlighted specific suggestions for attending more studies on qualitative methods and exploring more untapped determinants, moderating and mediating factors of individual creativity towards organisational innovation.

*Keywords*: systematic review; individual creativity; organisational innovation

*ABSTRAK*

Inovasi amat penting untuk daya saing dan ianya berfungsi secara kritikalnya sebagai penentu kejayaan kelestarian prestasi organisasi, manakala kreativiti berfungsi sebagai pemangkin proses atau aktiviti organisasi. Salah satu sebab inovasi tidak mencukupi adalah kerana kurangnya perhatian diberi kepada kreativiti. Penyelidik pada masa ini memberikan banyak perhatian kepada kreativiti dengan menyasarkan individu atau pekerja, namun ulasan berbentuk sistematik amat minima dijalankan ke atas kolerasi antara kreativiti individu dengan inovasi organisasi. Oleh itu, artikel ini menganalisis literatur sedia ada berkaitan hubungan antara kreativiti individu dengan inovasi organisasi. Kami menggunakan kaedah penyataan PRISMA (Item Pelaporan Pilihan untuk Ulasan Sistematik dan Meta-Analisis) dan membuat tinjauan sistematik ke atas repositori *Web of Science* dan *Scopus*, seterusnya mengenal pasti 29 kajian berkaitan. Semakan yang lebih mendalam ke atas artikel-artikel ini menghasilkan lima tema utama dan enam sub-tema. Kami mencadangkan agar kajian selanjutnya menggunakan kaedah kualitatif di samping penerokaan faktor-faktor penentu, moderator dan pengantara kreativiti individu terhadap inovasi organisasi.

*Kata kunci*: ulasan sistematik; kreativiti individu; inovasi organisasi

## 1. Introduction

Today's competitive epoch necessitates an organisation to concentrate on innovation as the means of performance, competence, effectiveness and productivity to remain relevant. Innovation in the organisation has become an increasingly quintessential ingredient of

organisational achievement (Bowen *et al.* 2010; Gunday *et al.* 2011; Tuan *et al.* 2016; Hassan *et al.* 2013), success (Anderson & King 1991; Woodman *et al.* 1993), competitive advantage (Drew 1997; Porter 1990), financial gain (Bigliardi 2014), improvement in productivity (Hashi & Stojčić 2013; Mai *et al.* 2019), employment growth (Klomp & Van Leeuwen 2001; Lööf & Heshmati 2006) and longer-term survival (Anderson *et al.* 2014; Hogan & Coote 2014; Serrat 2017). Consequently, scholars and practitioners have always stressed the reading of the factors that promote or hinder innovation pursuits in organisational contexts (Merx-Chermin & Nijhof 2005; Shafique *et al.* 2019).

The word creativity comes typically to our minds when addressing innovation. Innovation and creativity are two terms which are often employed reciprocally (Zennouche *et al.* 2014). The two terms are considered as a similar and highly associated concepts with considerable feature overlap (Poole & Van de Ven 1989). Creativity has been a topic of interest for both scholars and practitioners for more than 35 years (Amabile & Pillemer 2012), and the body of literature has proliferated over the years. The costs, outcomes and long-term results have been analysed and followed (Khessina *et al.* 2018). Creativity has been confirmed to be one of the constituents determining organisational competence and competitive advantage (De Vasconcellos *et al.* 2019; van Esch *et al.* 2018) and competitive advantage (George 2007). Also, creativity exists in various setting types and is not restricted to one type of work, such as research and development (Parjanen 2012). Creativity and innovation are mandatory for any organisation.

We explained the research method and process to define creativity and innovation for this research's objectives. Ingenuity is the generation of fresh and essential thoughts generated by a single person or a small group of people working together (Amabile 1998). Almeida *et al.* (2008) described creativity as attitudes and skills required in order to generate concepts and products that are (a) relatively novel which are original and/or unexpected; (b) qualitatively superior; and (c) suitable for the task/function required (practical). Creativity transpires when people's capabilities align with their most significant inherent interests—their core passions—and when creativity becomes more remarkable, the three components (Amabile 1997). Creativity also involves the methods of innovation to produce value for individuals and organisations (West 2002). Employees with strong creative identity functions have higher levels of creative output as they perceive their creative work to be valued by their organisation (Farmer *et al.* 2003). In a dynamic work state, managers realise that they need to find creative employees who need to be actively involved in their job (Lee & Tan 2012).

According to Damanpour (1991), innovation involves adopting a gadget, system, policy, programme, method, product, or service created or purchased internally or externally that is new to the adopting organisation. Organisations hold the required knowledge base and abilities for handling crucial job functions and must be able to innovate on a continuous basis (Budhiraja *et al.* 2017). To remain competitive, organisations must innovate consistently (Lianto *et al.* 2018; Boer *et al.* 2001; Soosay & Chapman 2006) and drive employees to commit to the process of innovation (Anagha & Magesh 2016). Organisational motivations materialise in a few distinct forms, such as flexible time limits and easy access to knowledge (Anagha & Magesh 2016). It would boost the propensity of workers to attempt innovative techniques and processes when time limits are flexible and facilities are ready (Fernandez & Pitts 2011).

### 1.1. *A systematic review framework on individual creativity towards organisational innovation*

Systematic reviews are vital to assess all of the evidence on a specific topic or question. The importance of systematic reviews has increased as individuals have realised that the reviews ease the information redundancy's management by making it possible to view enormous

amounts of research data in a well-organized manner. Another benefit is that it has the ability to make conclusions that are transparent and perhaps defendable because rather than relying on a single study, it incorporates all relevant scientifically solid data (Petticrew & Roberts 2008). The results of the included studies may or may not be interpreted and compiled using statistical methods (Higgins & Green 2011). The researchers identified a significant quantity of empirical studies that had explored four levels of analysis: individual, team, organisational and multilevel factors in general. Nevertheless, a systematic understanding of how individual creativity contributes to organisational innovation was still lacking.

We had intended to develop a germane a thorough examination based on the central research question – 'how does individual creativity influence organisational innovation?'. The primary aim of the research was to investigate the link between individual creativity and organisational innovation. Specifically, this paper attempted to addresses the following questions:

(1) What are creativity and innovation in the organisation context?
(2) What are the study contexts discussed in the previous studies?
(3) What is the nature of relationships between individual creativity and organisational innovation?
(4) What are the underlying theories, underlying models or frameworks?
(5) What are the organisational innovation outcomes?

This section described the goal of doing a thorough review while the other sections detailed the methodology section and the PRISMA Statement (Preferred Reporting Items Systematic Reviews and Meta-Analysis) approach used. PRISMA focuses on how authors can guarantee that systematic reviews and meta-analyses are reported in a transparent and thorough manner (Liberati *et al*. 2009). The 3rd section thoroughly reviewed, analysed and synthesised scientific literature to locate, choose and decide on significant findings on the influence of individual creativity towards organisational innovation. The last section established priorities for future research.

## 2. Methodology

This section addressed the strategy for retrieving articles that are relevant to a specific person creativity and organisational innovation. We employed PRISMA, including resources (Web of Science and Scopus) utilised to do a systematic review, criteria for inclusion and removal, review process phases (identification, screening, and eligibility) and data analysis and abstraction.

### 2.1. *PRISMA*

The PRISMA Statement guided the review. According to Mohamed Shaffril *et al*. (2021), the chief priority of PRISMA is randomised trials. The PRISMA Statement allows the accurate search for phrases that are relevant to individual creativity in reaction to organisational innovation.

### 2.2. *Resources*

The review was based on two key journal databases - Web of Science and Scopus. Web of Science is the world's most esteemed global citation database that is publisher-agnostic. This platform empowers the researcher to track ideas across disciplines and time from over 1.7 billion cited references from over 159 million records. At the same time, Scopus is a vast multidisciplinary database with citations and abstracts covering peer-reviewed journal literature, trade journals, books, patent records and conference publications. Scopus affords

tools for tracKing analysing, and visualising search results over 21,000 titles from 5,000 publishers worldwide.

### 2.3. *Eligibility and exclusion criteria*

The choice of literature sources centered on relevant articles published within the last ten years that examined individual creativity and organisational innovation in the organisational context and must mention a theory, model, and/or framework directly or implicitly, antecedents, or determinants of individual creativity or factors that impact organisational innovation. Non-English language papers and papers published before 2010 were excluded (see Table 1).

Table 1: The eligibility and exclusion criterion

| Criterion | Eligibility | Exclusion |
|---|---|---|
| **Literature type** | Journal (research articles) | Journals (systematic literature review), book series, book, chapter in a book, conference proceeding |
| **Language** | English | Non-English |
| **Timeline** | Between 2010 and 2019 | <2010 |

### 2.4. *Systematic Review Process*

The systematic review process involved 4 stages and the reviewing process started in December 2019. We used some related keywords in the procedure for searching. Previous studies applied search terms similar to individual creativity and organisational innovation (Table 2). After screening, we've arrived to this point where we removed 15 duplicate articles. The second stage screened the abstract of the articles. At this stage, out of 428 articles eligible to be reviewed, the researchers removed 330 articles based on the exclusion criterion which excluded systematic review articles, book series, books, chapters in a book, conference proceedings, and non-English published. The third stage was eligibility, where the researchers assessed the full articles. After meticulous evaluation, 65 articles were also excluded since they did not fulfil the two areas of individual creativity and organisational innovation. The last stage of review resulted in a total of 29 articles that were used for the analysis (see Figure 1).

Table 2: The search string used for the systematic review process

| Database | Keywords used |
|---|---|
| **Web of Science** | TS=((“individual creativ*” OR “employee* creativ*” OR “staff creativ*”) AND (“organi*ational* innovat*” OR “firm* innovat*” OR “company innovat*” OR “corporate innovat*” OR “workplace* innovat*”)) |
| **Scopus** | TITLE-ABS-KEY((“individual creativ*” OR ”employee* creativ*” OR ”staff creativ*”) AND (“organi*ational* innovat*” OR ”firm* innovat*” OR ”company innovat*” OR ”corporate innovat*” OR ”workplace* innovat*”)) |

### 2.5. *Data abstraction and analysis*

The remainder of the articles were evaluated and analysed. We checked the articles and extracted data based on the formulated questions by first reading the abstract and then the complete reports to name appropriate themes and sub-themes.

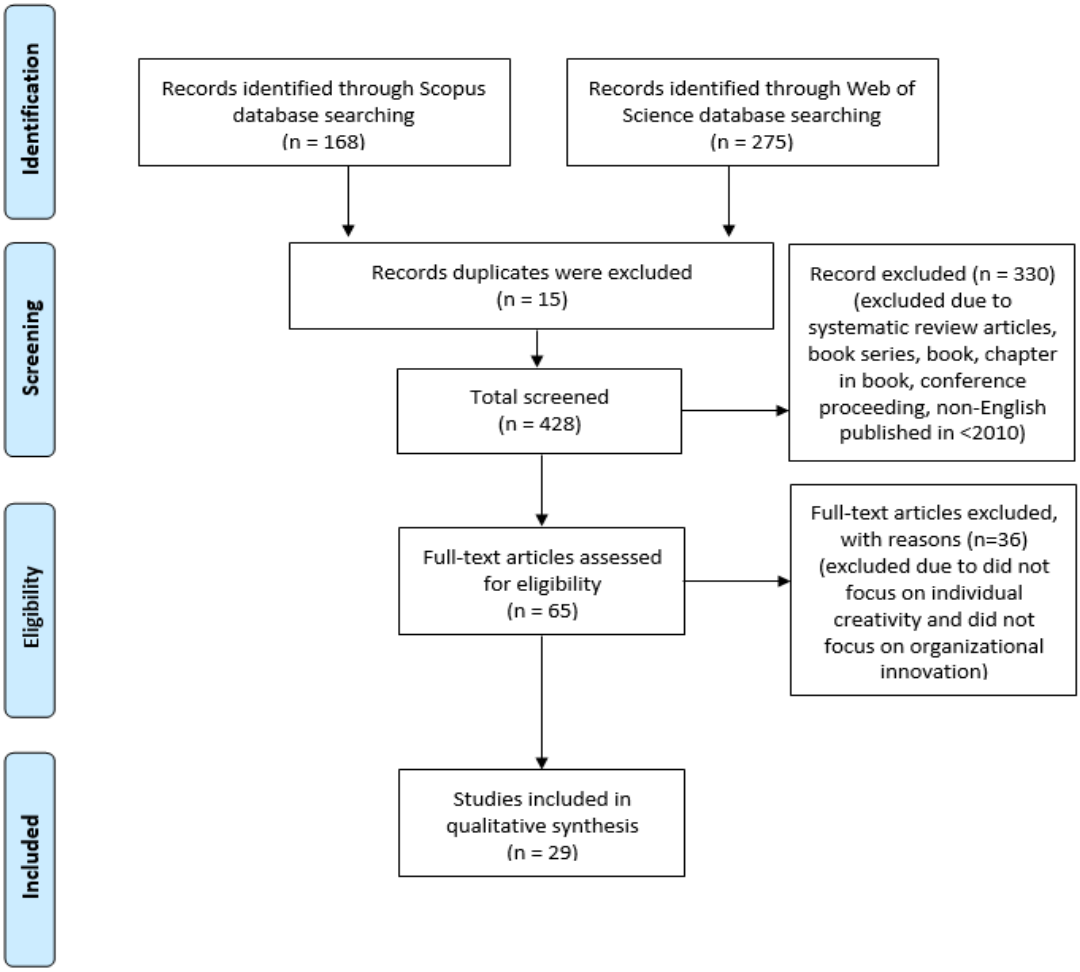


Figure 1: The study's flow diagram
(Moher *et al.* 2009)

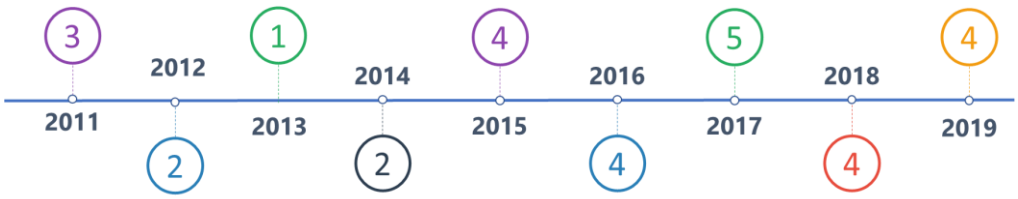


Figure 2: Reviewed articles published in the past 10 years

## 3. Results

The review included five central themes and six sub-themes. The five main themes were the creativity and innovation context (five sub-themes), study context, nature of the relationship (one sub-theme), underlying theories, underlying model and framework and outcomes of the organisational innovation. The results presented a comprehensive analysis of the factors that determine individual creativity towards organisational innovation. Only one study applied a qualitative approach, another study employed an econometric technique approach while the

remaining studies operated on a quantitative approach methodology. Regarding the year of publication (Figure 2), four studies were published each in 2019 and 2018, 5 researches were published in 2017, there were 4 studies published in 2016 and 2015 respectively, two studies in 2014, one study was published in 2013, two studies in 2012 and finally three studies in 2011. No articles published in 2010 or earlier were reviewed.

Based on Figure 3, a word cloud from the 29 articles captured the term 'creativity' being used 3967 times, 'innovation' 2542 times and the term 'employee' was found 1535 times.


Figure 3: Word cloud generated from 29 articles.

Table 3: Definition of creativity from the literature

| Definition | Quotes By | References |
|---|---|---|
| **Creativity involves introducing new and practical ideas which improve the overall effectiveness of the organisational processes.** | Gong *et al.* (2009) | Chaubey *et al.* (2019) |
| **Creativity includes making an innovative approach to solve problems, reproducing novelty to the existing ideas and creating a new solution.** | Shalley and Perry-Smith (2001) | Chaubey and Sahoo (2019) |
| **Creativity is the ability to create a novel and valuable idea.** | Amabile (1998) | Hong *et al.* (2018) |
| **Creativity is a synonym for the capacity for creativity. This is to say, the desire to participate in a cycle leading to a new idea and not just any.** | Anderson *et al.* (2014) | Castañer (2016) |
| **Creativity concerns producing original, surprising, new, high-quality, functional, and suitable output that satisfies the needs of specific tasks.** | Sternberg & Lubart (1991) | Han *et al.* (2015) |
| **As the ability to produce novel work, creativity is considered the starting point and the root of innovation.** | Amabile (1988; 1998); Shalley and Perry-Smith (2001) | Ghosh (2015) |
| **Creativity is the production of fresh and relevant ideas by an individual or a small group of individuals working together.** | Zhou *et al.* (2012) | Jiang *et al.* (2012) |

## 3.1. *Creativity and innovation context*

### 3.1.1. *Definition of creativity*

Several studies have explored the definition of creativity (Table 3) and innovation (Table 4). However, numerous studies have also attempted to explain the link between creativity and innovation (Table 5).

### 3.1.1. *Definitions of innovation*

The term "innovation" refers to original ideas and concepts that have been described as a series of procedures that include suggesting, implementing, and developing new concepts (Han *et al.* 2015). A notable amount of research was attended in this area. In recent years, innovation has become an increasingly vital area in organisational behaviour research. Innovation in the organisational circumstances symbolises the stage of using a new approach, such as the materialisation of a new product idea into a product prototype and subsequent production and (successful) commercialisation (Garud *et al.* 2013). According to Audia and Goncalo (2007), innovation includes applying or commercialising an invention, sometimes embedded in a patent (Tai & Mai 2016). In his major study of innovation, Zheng *et al*. (2016) classified innovation into (1) Management structure innovation, including the innovation of strategies and the composition of organisational structure and, (2) Technological innovation: containing the innovation of products, technology, work processes, and product creativity. More definitions of innovation are presented in Table 4.

Table 4: Definitions of innovation from the literature

| Definition | Quotes By | References |
|---|---|---|
| **Innovation works as the creation and exploitation of new plans.** | Kanter (2000) | Chaubey *et al*. (2019) |
| **Innovation refers to the actual introduction, use or transformation of a new idea.** | Baregheh *et al.* (2009); Mohr (1969); Rogers (1983; 1995); Schumpeter (1942); Van de Ven (1986) | Castañer (2016) |
| **Innovation is the intentional introduction and employment of unique ideas, processes, products or procedures that will benefit the job, the work team or the organisation.** | West *et al*. (2004) | Jiang *et al*. (2012) |
| **Innovation operates as the intentional introduction and application … of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to benefit significantly** | West and Farr (1990) | Peng *et al*. (2014) |
| **Innovation refers to creative thoughts and new conceptions and has been generally discussed as a series of processes such as suggesting, applying and developing new ideas** | McAdam and Galloway (2005) | Han *et al*. (2015) |

### 3.1.3. *Differentiations between creativity and innovation*

In management literature, the phrases creativity and innovation are frequently used interchangeably (Ghosh 2015). In the past, creativity and invention were examined separately. Some researchers have advocated that these two must be studied together since the 1990s (Han *et al.* 2015). Innovation is a concept that is sometimes confused with, but distinct from, creativity. Amabile *et al*. (1996) differentiated creativity and innovation as follows: “Like other researchers, we define creativity as the production of novel and useful ideas in any domain. We

define innovation as the successful implementation of creative ideas within an organisation" West and Farr (1990) explained the differences between the concepts as follows: "Creativity is closely related to the development of distinct beneficial ideas, while innovation is the successful development of new ideas. Therefore, creativity is the beginning phase of innovation" (Ali Taha *et al.* 2016). The sense of creativity and innovation for contemporary organisations is ever-increasing (Yoo *et al.* 2019). Besides differentiation between creativity and innovation, there are linkages between the two as shown in Table 5.

Table 5: Linkages of Creativity and Innovation

| Linking creativity and innovation | References |
|---|---|
| **Creativity is the predecessor of the innovation** | Chaubey *et al*. (2019) |
| **Creativity is the first and most crucial stage of innovation.** | |
| **Idea generation indicates creativity and idea implementation indicates innovation.** | Khalili (2017) |
| **Creativity is an ingredient for innovation** | Ghosh (2015) |
| **Creativity is the seed of all innovation** | Ali Taha *et al*. (2016) |
| **Creativity symbolises a seedbed of innovation** | Stojcic *et al*. (2018) |
| **Creativity, the generation of new ideas and innovation, the translation of these ideas into action** | Khalili (2017) |
| **Innovation is the conversion of creative ideas into new products** | Ouakouak and Ouedraogo (2017) |
| **Creativity, the starting point and the root of innovation** | Ghosh (2015) |
| **Creativity is a fundamental condition of innovation** | Han *et al*. (2015) |
| **Creativity as a starting point of innovation** | Han *et al*. (2015) |

### 3.1.4. *Individual creativity*

Individuals are the primary source of all innovation (Redmond *et al.* 1993). Individual creativity is viewed as a necessity for modern organisations by most scholars and practitioners as a vital source of organisational innovation (Ouakouak & Ouedraogo 2017). It has been reported that individual creativity is usually the starting point for innovation (Amabile 1997; Zhou & George 2001). Individual creativity can be viewed as a result of personal characteristics such as cognitive abilities, personality, and upbringing, as well as environmental circumstances, such as cultural and organisational backgrounds (Oldham & Cummings 1996). Woodman *et al*. (1993) reported individual creativity as formulating worthy, compelling new products, services, ideas, procedure or processes by working together in a complicated social system. Creativity is fostered when individuals have reasonably high autonomy and a sense of ownership and control over their work and ideas (Andriopoulos 2001). Employees are the ultimate resource of any organisation and every organisation, according to scholars. Leaders must learn to control, motivate, and reward their employees in order to stay inventive. Employees that are creative are more likely to spot prospects for new goods or find new ways to use existing methods, generating fresh ideas to tackle work-related challenges and building good implementation strategies (Gumusluoglu & Ilsev 2009).

Based on the analysis, we underlined the relationship between individual creativity and organisational innovation. On an individual basis, contributing factors of individual creativity can be divided into two, i.e., individual factors and social context. Table 6 describes the factors influencing individual creativity.

Table 6: Factors influencing individual creativity

| **Factors Influencing Individual Creativity** | | **References** |
|---|---|---|
| **Individual Factors** | Personality traits | Budhiraja *et al*. (2017); Derecskei *et al*. (2017); Tai and Mai (2016); Castañer (2016); Chen *et al*. (2015) |
| | Knowledge and experiences | Shafique *et al*. (2019); Ouakouak and Ouedrago (2017); Budhiraja *et al*. (2017); Castañer (2016); Han *et al*. (2015); Peng *et al*. (2014); Zhu and Chen (2014) |
| | Intrinsic motivation | Shafique *et al*. (2019); Al Harbi *et al*. (2018); Derecskei *et al*. (2017); Castañer (2016); Han *et al*. (2015); Hassan *et al*. (2013) |
| | Psychological states | Shafique *et al*. (2019); Al Harbi *et al*. (2018); Budhiraja *et al*. (2017) |
| | Creative skills | Stojcic *et al*. (2018); Budhiraja *et al*. (2017); Derecskei *et al*. (2017) |
| | Creative thinking | Han *et al*. (2015) |
| | Self-concept and identity | Chaubey *et al*. (2019); Ouakouak and Ouedrago (2017); Budhiraja *et al*. (2017); Castañer (2016); Chen *et al*. (2015); Ghosh (2015) |
| | Job characteristics | Yoo *et al*. (2019); Castañer (2016); Hassan *et al*. (2013) |
| | Domain-relevant skills | Liu *et al*. (2017) |
| | Perspective-taking | Litchfield *et al.* (2014) |
| | Novelty and value | Gruys *et al*. (2011) |
| **Social Contexts** | Human resources system | Chaubey and Sahoo (2019); Liu *et al*. (2017); Jiang *et al*. (2012) |
| | Work environment | Al Harbi *et al*. (2018); Wipulanusat *et al*. (2017); Dul and Ceylan (2011) |
| | Leadership and supervision | Chaubey *et al*. (2019); Zhang and Wang (2018); Khalili (2017); Castañer (2016); Hassan *et al*. (2013) |
| | Extrinsic rewards | Chaubey and Sahoo (2019); Yoo *et al*. (2019) |
| | Collectivism | Hong *et al*. (2018) |
| | Culture | Ali Taha *et al*. (2016); Gupta (2011) |
| | Time pressure | Chen *et al*. (2015) |
| | Creativity climate | Ghosh (2015); Çekmecelioğlu and Günsel (2013) |
| | Social network | Peng *et al*. (2014) |

#### 3.1.5. *Organisational innovation*

The ability of an organisation to innovate is a precondition for the successful utilisation of incentive resources and innovative technologies. In general, organisational innovation refers to designing or utilising a new concept or conduct in the organisation (Daft 1978; Damanpour *et al*. 1989; Damanpour 1996). According to Amabile *et al*. (1996), organisational innovation is a socially successful method executing original ideas and converting them into beneficial outcomes (i.e., processes, practises or items that are better) for an organisation (Hong *et al.* 2018). Chua *et al*. (2015) determined organisational innovation as the management innovation of organisation, planning, employment, leadership and control formed by an organisation purchasing or introducing from an external organisation or generating from an internal organisation as well as the technological innovation of products, processes and equipment, which should affirm the contribution by organisational members (Hansen *et al.* 2017). Amabile (1988) model for creativity and innovation in organisations was one of the pioneers to integrate the organisational context into creativity (Yoo *et al.* 2019).

### 3.2. *Study context*

When reviewing the papers to recognise the study context related to individual creativity and organisational innovation, we found eleven papers which focused directly on individual creativity towards organisational innovation (Hong *et al.* 2018; Ouakouak & Ouedrago 2017;

Budhiraja *et al.* 2017; Derecskei *et al.* 2017; Castañer 2016; Litchfield *et al.* 2014; Han *et al.* 2015; Peng *et al.* 2014; Hassan *et al.* 2013; Çekmecelioğlu & Günsel 2013; Gruys *et al.* 2011), five papers highlighted the human resource management/system towards individual creativity link (Chaubey & Sahoo 2019; Zhang & Wang 2018; Liu *et al.* 2017; Khalili 2017; Jiang *et al.* 2012), four focused explicitly on linking leadership to individual creativity (Chaubey *et al.* 2019; Shafique *et al.* 2019; Al Harbi *et al.* 2018; Ghosh 2015), two discussed culture and individual creativity (Ali Taha *et al.* 2016; Gupta 2011) and two underlined work environment (Dul & Ceylan 2011; Wipulanusat *et al.* 2017). High-performance work systems (Zhu & Chen 2014), individual disposition (Chen *et al.* 2015), creative skills (Stojcic *et al.* 2018), job characteristics (Yoo *et al.* 2019) and proactive personality (Chaubey & Sahoo 2019) were each identified once. Reviewed together, the most focused (eleven articles) items were on factors which foster, facilitate or hinder individual creativity, components and the dimension of individual creativity and effects of creativity towards organisational innovation. Other papers discussed the link between leadership with individual creativity, specifically focused on transformational leadership, ethical leadership, self-leadership and superior support. At the same time, there were also papers related to human resources which focused on the human resource facets of systems, management and interventions. Figure 4 shows the percentage of study context related to individual creativity and organizational innovation extracted from 29 articles.

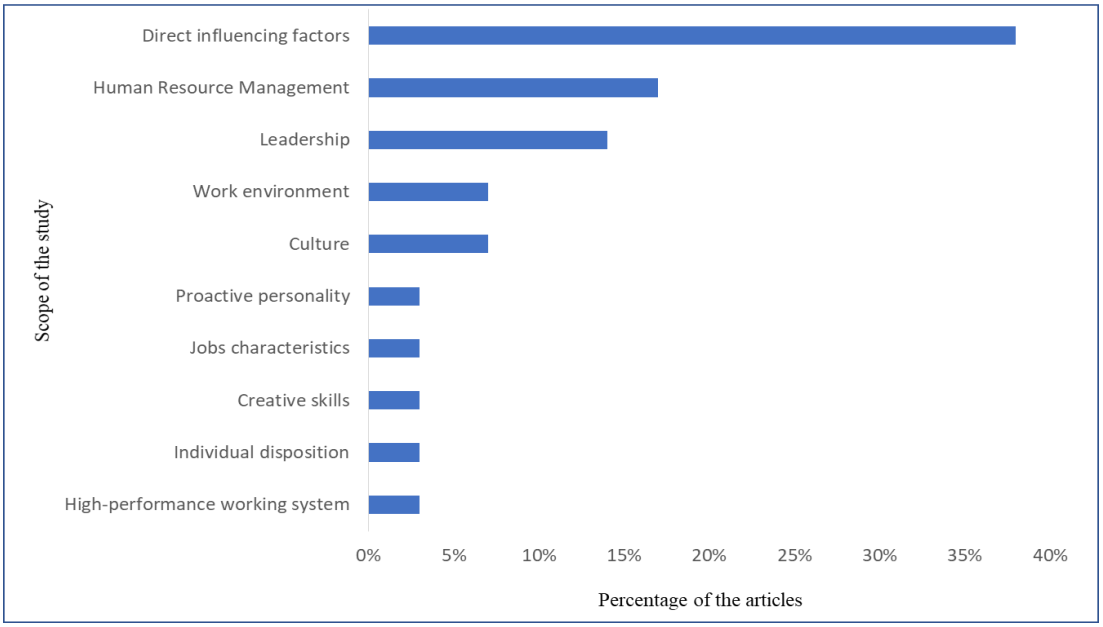


Figure 4: Study context related to individual creativity and organisational innovation

### 3.3. *Nature of Relationship*

The nature of the relationship revealed in the papers reviewed explained the correlation between two or more variables. The study of the relationships between influencing factors of individual creativity and organisational innovation, including moderating and mediating variables creativity, has indicated that they are very closely linked. As for transformational leadership, this factor performs synchronously with employees' creativity and innovation in organisations. Four human resource practices, hiring and selection, reward, job design and teamwork, were

positively related to employee creativity. All characteristics of the job (i.e., variety, skill, feedback and autonomy) positively affected individual creativity. High-performance work systems also positively transform knowledge sharing and employee creativity. It was found that innovation culture has a notable positive impression on creativity. The results revealed that creative skills generate unique solutions and focus in research and development but the capability to fulfil the requirements of the customer is obtained from other organisational skills such as organisational innovations or organisational innovations (Stojcic *et al.* 2018).

A study by Ghosh (2015) demonstrated an essential correlation between employee creativity, self-leadership, creativity climate and innovative workplace orientation. Ethical leadership moves employee creativity through knowledge sharing and psychological empowerment, while at the organisational level, the results revealed that ethical leadership is positively associated with organisational innovation directly (Shafique *et al.* 2019). The conclusions of the study suggested that future-oriented and innovative cultures create a significant beneficial impact on creative thinking. The impact of other cultural dimensions on creativity was not significant (Zhu & Chen 2014). The research findings by Zhang and Wang (2018) showed strong positive correlations between supervisor support and employee creativity, revealing the effect of supervisors' attitudes on employees' creativity.

### 3.4. *The underlying theories, underlying models or framework*

The underlying theory cited most frequently (24%) was The Componential Theory of Creativity and Innovation in Organisation, introduced by Teresa Amabile in 1983. This theory has had a great amount of evolution since it was introduced. The Componential Theory of Creativity and Innovation in Organisation is recognised as one of the well-cited theories of individual creativity and organisations, where it is the partial bedrock for many other empirical investigations and theories. The theory consists of three domain components: domain-relevant skills, creativity-relevant skills, and task motivations which are all essential for creative performance. This theory also includes five phases of the creative process: problem or task identification, preparation, response generation, response validation and communication, and outcome. The current version of the theory embraces organisational creativity and innovation, carrying implications for the work environments created by managers. The second most cited underlying theory (17%) was the Interactionist Theory by Woodman *et al*. (1993). Woodman *et al*. (1993) pointed out the value of examining interactions among individual, group, and organisational factors. The other underlying theories discussed were Transformational Leadership Theory (Burns 1978), Multi-stage Model of Innovation Behaviour (Crepon *et al.* 1998), 4P's Model of Creativity (Rhodes 1961), Person-Organisation Fit Theory (Kristof 1996), Learning and Cognitive Theories and Motivation Theory and Schumpeter's Theory of Economic Evolution.

Several studies grounded frameworks for research. Some of the examples of the frameworks developed by scholars are presented in this systematic literature review. Based on research by Chaubey and Sahoo (2019), human resource interventions influenced employee creativity and could enhance innovation in organisations. In this study, the researchers categorised human resource intervention into rewards, training and incentives and organisational learning.

Chaubey *et al*. (2019) discovered a well-recognised association between employee creativity and transformational leadership, transforming organisational innovation. In this established framework, the physical work environment acts as a moderator and creative self-efficacy acts as a mediator. Yoo *et al*. (2019) recognised that job characteristics and organisational context factors impact individual creativity. Job characteristics comprise skill variety, autonomy and feedback, while organisational context factors are divided into organisational climate, resources and extrinsic rewards. The organisational context moderates the relationship between job

characteristics and individual creativity. Shafique *et al*. (2019) conducted a study where the link between ethical leadership, employee creativity and organisational innovation was examined. Three components, which are knowledge sharing, intrinsic motivation and the relationship between ethical leadership and employee creativity is mediated by psychological empowerment. There are direct and indirect relationships correlated with ethical leadership and organisational innovation.

Ghosh (2015) showed that self-leadership is linked to employee inventiveness and a forward-thinking attitude in the workplace. Self-leadership comprises behaviour focus, natural reward and constructive thought. Creativity context moderates the relationship between employee creativity and workplace innovative orientation. Jiang *et al*. (2012) illustrated the relationship of employee creativity towards administrative innovation and technological innovation. He classified employee creativity factors as: hiring and selection, training, performance evaluation, reward, job design and teamwork.

Ouakouak & Ouedraogo (2017) established a relationship between employee creativity and innovation. Knowledge sharing, person-organisation, and corporate ethics are all factors that inspire innovation in this study. The link between business ethics and individual creativity is moderated by personal trust. Tai and Mai (2016) named five influencing determinants of employee creativity: support-interaction-communication, risk-taking orientation, proactive personality, atmosphere and structure, control and hierarchy. Employee creativity is directly affected by innovative organisational capability. Han *et al*. (2015) shared his research framework of individual creativity directly impacting organisational innovation. The effect of individual creativity towards organisational innovation can be moderated by creativity in groups and creativity in organisations. Innovation in groups notably influences creativity in organisations. Hassan *et al*. (2013) illustrated a relationship between employee intrinsic motivations with employee creativity. Job complexity and relationship with a supervisor are classified under employee intrinsic motivation. Outcomes of the employee creativity to the organisation are organisational innovation capability and organisational performance.

### 3.5. *Innovation outcomes*

Innovation outcomes were defined as the substantive results of implementing an innovation that can be intended or unintended and positive or negative (Kuipers *et al.* 2014). The types of outcomes reported in the studies are organisational performance, effectiveness of innovation and productivity. In addition, administrative innovation and technological innovation can improve organisational performance and other factors (Jiang *et al.* 2012). Administrative innovations are classified as those in the administrative component which affect an organisation's social system. Technological innovation is characterised by organisational components and affects the organisation's technical structure (Damanpour *et al.* 1989). Based on Chaubey *et al*. (2019), organisational innovation grows profit margins, productivity, conducive work environments and market leadership. The innovation outcomes were highlighted in studies by Stojcic *et al*. (2018), Hassan *et al*. (2013) and Chaubey *et al*. (2019). At the same time, most of the studies did not report innovation outcomes. Studies often mentioned some innovation objectives in their introduction, such as improving effectiveness and efficiency but failed to report whether these goals had been realised (Bartlett & Dibben 2002).

## 4. Discussion

This study tried to provide a comprehensive review of the literature on the impact of individual creativity on organisational innovation. Understanding the dynamics of creativity in

organisations is now a massive priority in organisational behaviour research (Lee & Tan 2012). Creativity has substantially contributed to organisational innovation and is confirmed to be the determinant of organisational survival. A rigorous review sourced from two databases found 29 articles related to individual creativity and organisational innovation. The researchers identified the five themes within the scope of this review, creativity and innovation context; nature of the relationship; study context; underlying theories or underlying model; nature of the relationship; the output of organisational innovation, and from which six sub-themes emerged – definition of creativity; definition of innovation; differentiation between creativity and innovation; individual creativity; organisational innovation; influencing factors of individual creativity.

This review's unique contribution revealed the relationships between creativity and innovation, besides the difference between the two aspects. One may infer that creativity is the initial innovation phase and that innovation cannot be implemented without creativity. As highlighted in the review, prior studies also noted the significance of individual creativity as a crucial factor in the process of organisational innovation (Amabile 1998). At the same time, critics have emphasised that individual creativity contributes to organisational innovation (Drazin & Schoonhoven 1996) and can be a deciding factor in the survival of an organisation (Bharadwaj & Menon 2000; Edwards-Schachter *et al.* 2015; Mumford & Hemlin 2017). A good connection between individual creativity and organisational innovation has been reported in previous studies. This review is consistent with other studies and recommends encouraging individual creativity also promotes organisational innovation (Hulpke 2019; Sohn & Jung 2010). A study by De Vries *et al*. (2016) confirmed the role of an agent in enabling innovation both on the organisational level and the individual level.

This review further supports the concept of measuring innovation outcomes in various indicators as one of the critical components in organisational innovation. There are similarities with a systematic review by Crossan & Apaydin (2010) that has produced a multi-dimensional framework of organisational innovation, including innovation as a process and an outcome. It demonstrated that measurement of performance is essential in the study of organisational innovation. This review is related to the component of an efficient innovation system studied by Serrat (2017), which found that it is the performance management system that monitors the organisation's creative pulse; ensures tracking and assessing inputs, operations, outputs, results and impacts; and feeds lessons back to the system. This research will add to performance improvements by demonstrating that organisational inventiveness is based on the simultaneous and multiple influences of individual and collective features (Aragón-Correa *et al.* 2007). Previous research that measured organisation performance based on innovativeness by Ramalingam *et al*. (2015) found a very positive support for the conceptualisation of innovation and creativity as an critical property of organisations that will positively impact firm performance. Whilst Hussein *et al*. (2016) explored achieving organisational performance and innovativeness from learning organisational culture.

In essence, this review categorised the theories, models and frameworks based on their attributes and did not classify all studies as similar. Based on the research objectives to relate individual creativity, organisational innovation and innovation outcomes, some possible mediating or moderating variables need to be decided. We proposed a conceptual framework of individual creativity and organisational innovation, which included the innovation process as a mediator of the relationship between individual creativity and organisational innovation.

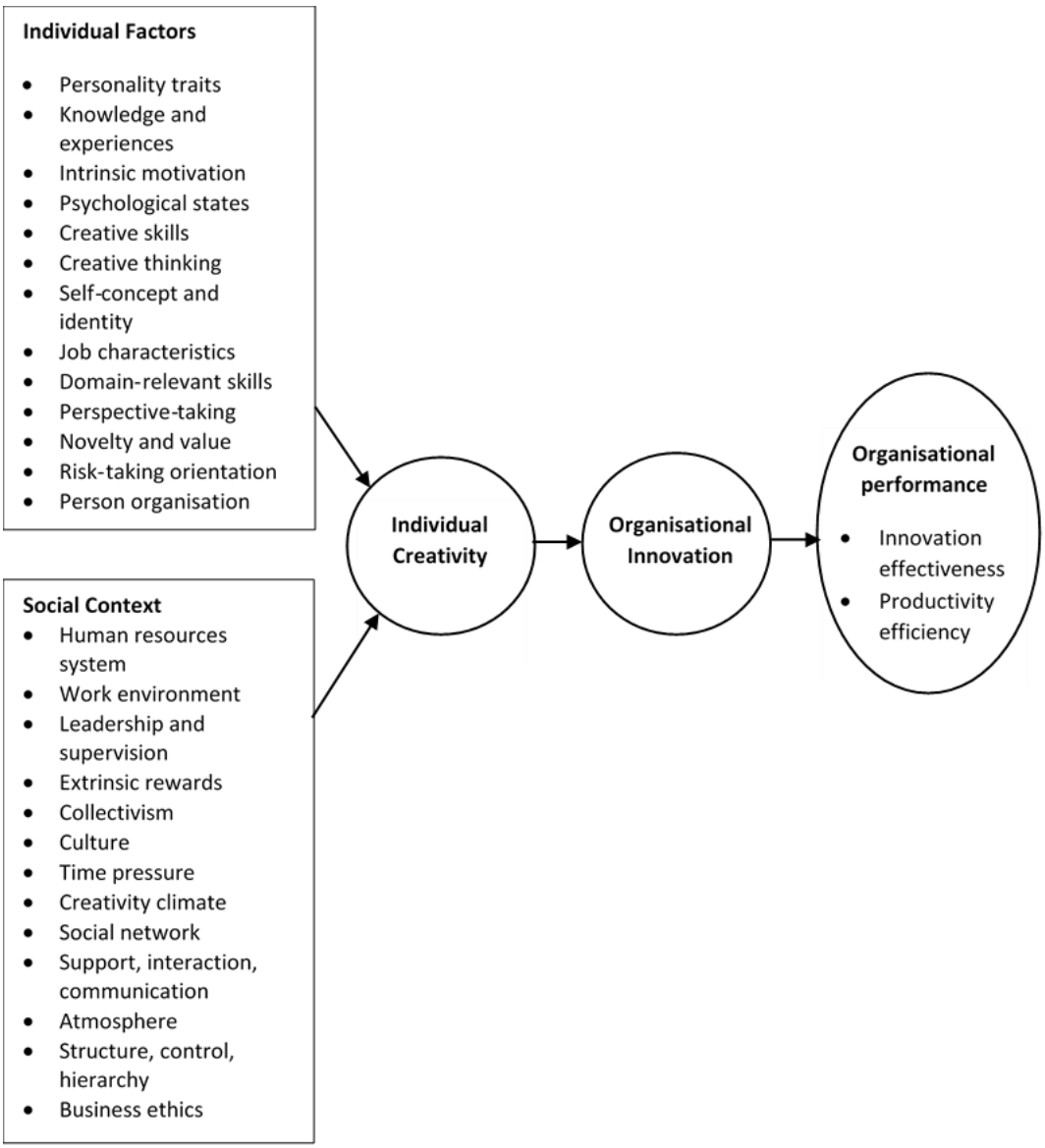


Figure 5: A proposed conceptual framework

The distinction between innovation as a process and outcome is vague (Crossan & Apaydin 2010). In reading on the influence of innovations on productivity effectiveness, Stojcic *et al*. (2018) revealed an influence between creativity and the stage of the innovation procedure. The innovation process can be a quantum leap of individual creativity in an organisation. It starts with idea generation and is followed by various stages of idea construction and implementation. We included organisational performance as an outcome or impact of innovation in the organisation context.

This research attempted to give a thorough examination of the literature on the impact of individual creativity on organisational innovation. Only a few studies explored the individual, group and organisational antecedents of creativity, as well as how all three influence creativity to some degree. The researchers contributed to the literature on individual creativity by

investigating both its antecedents and its outcomes. Besides, leadership plays a critical role in managing innovation and creativity in organisations. Recent studies focused more on leadership as a motivator for the employees to become more creative and produce more innovative products. It is essential to measure and consider individual creativity to promote workplace innovation. Most of the studies adopted a measuring scale developed by Zhou and George (2001).

## 5. Future Direction

Therefore, prospective researchers should consider several domains. Firstly, it is crucial to note that most articles in this review were fully quantitative. Future studies should consider applying a qualitative or mix-method approach. A qualitative approach is an in-depth analysis, while the mix-method approach provides a complete perspective or studies. Despite focusing on factors that influence employee creativity, studies on outcomes of organisational innovation need more attention. Future studies should concentrate on a systematic review of three degrees of exposition; individual, team, and organisation, and it would render a holistic perspective of creativity in an organisation. Secondly, more databases should be considered to examine more articles associated with this area. Exploring the method used in previous research could also give an idea of how the analysis trend on creativity and organisational innovation in the future.

## 6. Conclusion

Ergo, this systematic review has broadly examined the relationship of individual creativity towards organisational innovation. This paper provided a list of definitions of creativity and innovation, including the differentiation and linkages between creativity and innovation. This paper also shared the study context related to individual and organisational innovation. Additionally, this paper explored the nature of the relationship between influencing factors of individual creativity and organisational innovation. Influencing factors evolve from time to time to respond to the trend of research on individual creativity towards organisational innovation. This research ultimately proposed a conceptual framework based on the underlying theories, models, and frameworks in the analysed articles to contribute to this field of research.

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### References

Al Harbi J.A., Alarifi S. & Mosbah A. 2018. Transformation leadership and creativity: Effects of employees psychological empowerment and intrinsic motivation. *Personnel Review* **48**(5): 1082-1099.

Ali Taha V., Sirková M., & Ferencová M. 2016. The impact of organizational culture on creativity and innovation. *Polish Journal of Management Studies* **14**(1): 7–17.

Almeida L.S., Prieto L.P., Ferrando M., Oliveira E., & Ferrándiz C. 2008. Torrance test of creative thinking: The question of its construct validity. *Thinking Skills and Creativity* **3**(1): 53–58.

Amabile T.M. 1988. A model of creativity and innovation in organizations. *Research in Organizational Behavior* **10**(1): 123–167.

Amabile T.M. 1997. Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review* **40**(1): 39-58.

Amabile T.M. 1998. How to kill creativity. *Harvard Business Review*, September/October, 77-87.

Amabile T.M. & Pillemer J. 2012. Perspective on the social psychology of creativity. *The Journal of Creative Behavior* **46**(1): 3-15.

Amabile T.M., Conti R., Coon H., Lazenby J. & Herron M. 1996. Assessing the work environment for creativity. *Academy of Management Journal* **39**(5): 1154–1184.

Anagha K. & Magesh R. 2016. Employee motivation to innovate and resources management: The mediating role of organisational commitment. *International Journal of Management Concepts and Philosophy* **9**(3): 185-199.

Anderson N., Potočnik K. & Zhou J. 2014. Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management* **40**(5):1297–1333.

Anderson N.R. & King N. 1991. Managing innovation in organisations. *Leadership & Organization Development Journal* **12**(4): 17–21.

Andriopoulos C. 2001. Determinants of organisational creativity: A literature review. *Management Decision* **39**(10): 834–841.

Aragón-Correa J.A., García-Morales V.J. & Cordón-Pozo E. 2007. Leadership and organizational learning's role on innovation and performance: Lessons from Spain. *Industrial Marketing Management* **36**(3): 349–359.

Audia P.G. & Goncalo J.A. 2007. Past success and creativity over time: A study of inventors in the hard disk drive industry. *Management Science* **53**(1): 1–15.

Baregheh A., Rowley J. & Sambrook S. 2009. Towards a multidisciplinary definition of innovation. *Management Decision* **47**(8): 1323–1339.

Bartlett D. & Dibben P. 2002. Public sector innovation and entrepreneurship: Case studies from local government. *Local Government Studies* **28**(4): 107–121.

Bharadwaj S. & Menon A. 2000. Making innovation happen in organizations: Individual creativity mechanisms, organizational creativity mechanisms or both?. *Journal of Product Innovation Management* **17**(6): 424–434.

Bigliardi B. 2014. The effect of innovation on financial performance: A research study involving SMEs. *Innovation: Management, Policy & Practice* **15**(2): 245-255.

Boer H., Caffyn S., Corso M., Coughlan P., Gieskes J., Magnusson M., Pavesi S. & Ronchi S. 2001. Knowledge and continuous innovation: The CIMA methodology. *International Journal of Operations & Production Management* **21**(4): 490-504.

Bowen F.E., Rostami M. & Steel P. 2010. Timing is everything: A meta-analysis of the relationships between organizational performance and innovation. *Journal of Business Research* **63**(11): 1179–1185.

Budhiraja S., Pathak U.K. & Kaushik N. 2017. A framework for untapped creativity: Leveraging components of individual creativity for organizational innovation. *Development and Learning in Organizations* **31**(6): 7–9.

Burns J.M. 1978. *Leadership*. New York: Harper & Row.

Castañer X. 2016. Redefining creativity and innovation in organisations: Suggestions for redirecting research. *International Journal of Innovation Management* **20**(4): 1-23.

Çekmecelioğlu H.G. & Günsel A. 2013. The effects of individual creativity and organizational climate on firm innovativeness. *Procedia-Social and Behavioral Sciences* **99**: 257–264.

Chaubey A. & Sahoo C.K. 2019. Role of HR interventions in enhancing employee creativity and organizational innovation: An empirical study. *Industrial and Commercial Trainning* **51**(3): 195-206.

Chaubey A., Sahoo C.K. & Khatri N. 2019. Relationship of transformational leadership with employee creativity and organizational innovation: A study of mediating and moderating influences. *Journal of Strategy and Management* **12**(1): 61–82.

Chen M.H., Chang Y.Y. & Chang Y.C. 2015. Exploring individual-work context fit in affecting employee creativity in technology-based companies. *Technological Forecasting and Social Change* **98**: 1–12.

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.

Crepon B., Duguet E. & Mairessec J. 1998. Research, innovation, and productivity: An econometric analysis at the firm level. *Economics of Innovation and New Technology* **7**(2): 115-158.

Crossan M.M. & Apaydin M. 2010. A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies* **47**(6): 1154–1191.

Daft R.L. 1978. A dual-core model of organizational innovation. *Academy of Management Journal* **21**(2): 193-210.

Damanpour F. 1991. Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal* **34**(3): 555-590.

Damanpour F. 1996 Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science* **42**(5): 693-716.

Damanpour F., Szabat K.A. & Evan W.M. 1989. The relationship between types of innovation and organizational performance. *Journal of Management Studies* **26**(6): 587–602.

De Vasconcellos S.L., Garrido I.L. & Parente R.C. 2019. Organizational creativity as a crucial resource for building international business competence. *International Business Review* **28**(3): 438-449.

De Vries H., Bekkers V. & Tummers L. 2016. Innovation in the public sector: A systematic review and future research agenda. *Public Administration* **94**(1): 146-166.

Derecskei A.K., Nagy V. & Paprika Z.Z. 2017. How can creative workplaces meet creative employees?. *Central European Business Review* **6**(4): 3–19.

Drazin R. & Schoonhoven C.B. 1996. Community, population, and organization effects on innovation: A multilevel

perspective. *Academy of Management Journal* **39**(5): 1065–1083.
Drew S.A. 1997. From knowledge to action: The impact of benchmarking on organizational performance. *Long Range Planning* **30**(3): 427-441.
Dul J. & Ceylan C. 2011. Work environments for employee creativity. *Ergonomics* **54**(1): 12–20.
Edwards-Schachter M., García-Granero A., Sánchez-Barrioluengo M., Quesada-Pineda H. & Amara N. 2015. Disentangling competences: Interrelationships on creativity, innovation and entrepreneurship. *Thinking Skills and Creativity* **16**: 27–39.
Farmer S.M., Tierney P. & Kung-Mcintyre K. 2003. Employee creativity in Taiwan: An application of role identity theory. *Academy of Management Journal* **46**(5): 618–630.
Fernandez S. & Pitts D.W. 2011. Understanding employee motivation to innovate: Evidence from front line employees in United States federal agencies. *Australian Journal of Public Administration* **70**(2): 202–222.
Garud R., Tuertscher P. & Van de Ven A.H. 2013. Perspectives on innovation processes. *Academy of Management Annals* **7**(1): 775–819.
George J.M. 2007. Creativity in organizations. *Academy of Management Annals* **1**(1): 439-477.
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.
Gong Y., Huang J.C. & Farh, J.L. 2009. Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. *Academy of Management Journal* **52**(4): 765–778.
Gruys M.L., Munshi N.V. & Dewett T.C. 2011. When antecedents diverge: Exploring novelty and value as dimensions of creativity. *Thinking Skills and Creativity* **6**(2): 132–137.
Gumusluoglu L. & Ilsev A. 2009. Transformational leadership, creativity, and organizational innovation. *Journal of Business Research* **62**(4): 461-473.
Gunday G., Ulusoy G., Kilic K. & Alpkan L. 2011. Effects of innovation types on firm performance. *International Journal of Production Economics* **133**(2): 662–676.
Gupta B. 2011. Organisational culture and creative behaviour: Moderating role of creative style preference. *International Journal of Innovation and Learning* **10**(4): 429–441.
Han J.H., Jung J.T. & Joo H.K. 2015. A study on effects of creativity to organizational innovation. *Indian Journal of Science and Technology* **8**(24): 1-13.
Hansen K., Amundsen O., Aasen T.M.B. & Gressgård L.J. 2017. Management Practices for Promoting Employee-Driven Innovation. In: Oeij P., Rus D., Pot F. (eds.) *Workplace Innovation. Aligning Perspectives on Health, Safety and Well-Being*: 321-338. Cham: Springer International Publishing.
Hashi I. & Stojčić N. 2013. The impact of innovation activities on firm performance using a multi-stage model: Evidence from the Community Innovation Survey 4. *Research Policy* **42**(2): 353–366.
Hassan M.U., Malik A.A., Hasnain A., Faiz M.F. & Abbas J. 2013. Measuring employee creativity and its impact on organization innovation capability and performance in the banking sector of Pakistan. *World Applied Sciences Journal* **24**(7): 949–959.
Higgins J.P.T. & Green S. 2011. Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0. https://handbook-5-1.cochrane.org/ (11 October 2021).
Hogan S.J. & Coote L.V. 2014. Organizational culture, innovation, and performance: A test of Schein's model. *Journal of Business Research* **67**(8): 1609-1621.
Hong J., Hou B., Zhu K. & Marinova D. 2018. Exploratory innovation, exploitative innovation and employee creativity: The moderation of collectivism in Chinese context. *Chinese Management Studies* **12**(2): 268-286.
Hulpke J.F. 2019. No individual creativity, no organizational innovation. *Journal of Innovation in Business and Economics* **3**(01): 41-48.
Hussein N., Omar S., Noordin F. & Ishak N.A. 2016. Learning organization culture, organizational performance and organizational innovativeness in a public institution of higher education in Malaysia: A preliminary study. *Procedia Economics and Finance* **37**: 512-519.
Jiang J., Wang S. & Zhao S. 2012. Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms. *The International Journal of Human Resource Management* **23**(19): 4025–4047.
Kanter R.M. 2000. When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. In Staw B. & Sutton R. (eds.) *Research in Organizational Behavior* (Vol. **22**). Amsterdam: Elsevier Science.
Khalili A.. 2017. Linking transformational leadership, creativity, innovation, and innovation-supportive climate. *Management Decision* **54**(9): 2277-2293.
Khessina O.M., Goncalo J.A. & Krause V. 2018. It's time to sober up: The direct costs, side effects and long-term consequences of creativity and innovation. *Research in Organizational Behavior* **38**: 107–135.
Klomp L. & Van Leeuwen G. 2001. Linking innovation and firm performance: A new approach. *International Journal of the Economics of Business* **8**(3): 343–364.
Kristof A.L. 1996. Person-organization fit: An integrative review of its conceptualizations, measurement, and

implications. *Personnel Psychology* **49**(1): 1-49.
Kuipers B.S., Higgs M., Kickert W., Tummers L., Grandia J. & Van der Voet J. 2014. The management of change in public organizations: A literature review. *Public Administration* **92**(1):1–20.
Lee L.Y. & Tan E. 2012. The influences of antecedents on employee creativity and employee performance : A meta-analytic review. *Interdisciplinary Journal of Contemporary Research In Business* **4**(2): 984–996.
Lianto B., Dachyar M. & Soemardi T.P. 2018. Continuous innovation : A literature review and future perspective. *International Journal on Advanced Science, Engineering and Information Technology* **8**(3): 771–779.
Liberati A., Altman D.G., Tetzlaff J., Mulrow C., Gøtzsche P.C., Ioannidis J.P., Clarke M., Devereaux P.J., Kleijnen J. & Moher, D. 2009. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *Journal of Clinical Epidemiology* **62**(10): e1-e34.
Litchfield R.C., Ford C.M. & Gentry R.J. 2014. Linking individual creativity to organizational innovation. *The Journal of Creative Behavior* **49**(4): 279–294.
Liu D., Gong Y., Zhou J. & Huang J.C. 2017. Human resource systems, employee creativity, and firm innovation: The moderating role of firm ownership. *Academy of Management Journal* **60**(3): 1164–1188.
Lööf H. & Heshmati A. 2006. On the relationship between innovation and performance: A sensitivity analysis. *Economics of Innovation and New Technology* **15**(4-5): 317-344.
Mai A.N., Van Vu H., Bui B.X. & Tran T.Q. 2019. The lasting effects of innovation on firm profitability: panel evidence from a transitional economy. *Economic Research-Ekonomska Istraživanja* **32**(1): 3411–3430.
McAdam R. & Galloway A. 2005. Enterprise resource planning and organizational innovation: A management perspective. *Industrial Management & Data Systems* **105**(3):280–90.
Merx-Chermin M. & Nijhof W.J. 2005. Factors influencing knowledge creation and innovation in an organisation. *Journal of European Industrial Training* **29**(2): 135–147.
Mohamed Shaffril H.A., Samsuddin S.F. & Abu Samah A. 2021. The ABC of systematic literature review: The basic methodological guidance for beginners. *Quality and Quantity* **55**(4) : 1319-1346.
Moher D., Liberati A., Tetzlaff J., Altman D.G. & PRISMA Group. 2009. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine* **151**(4): 264-269.
Mohr L.B. 1969. Determinants of innovation in organizations. *American Political Science Review* **63**(1): 111-126.
Mumford M.D. & Hemlin S. (eds.). 2017. *Handbook of Research on Leadership and Creativity*. United Kingdom: Edward Elgar Publishing.
Oldham G.R. & Cummings A. 1996. Employee creativity: Personal and contextual factors at work. *Academy of Management Journal* **39**(3): 607-634.
Ouakouak M.L. & Ouedraogo N. 2017. Antecedents of employee creativity and organisational innovation: An empirical study. *International Journal of Innovation Management* **21**(07): 1750060.
Parjanen S. 2012. Experiencing creativity in the organization: From individual creativity to collective creativity. *Interdisciplinary Journal of Information, Knowledge, and Management* **7**: 109–128.
Peng J., Zhang G., Fu Z. & Tan Y. 2014. An empirical investigation on organizational innovation and individual creativity. *Information Systems and e-Business Management* **12**(3): 465–489.
Petticrew M. & Roberts H. 2008. *Systematic Reviews in the Social Sciences: A Practical Guide*. United Kingdom: Wiley-Blackwell.
Porter M.E. 1990. The competitive advantage of nations. *Harvard Business Review*, Mac-April, 73-91.
Ramalingam T., Karim J.A., Piaralal S. & Singh B. 2015. Creativity and innovation (organizational factor) influence on firm performance: an empirical study on Malaysian telecommunication mobile network operators. *American Journal of Economics* **5**(2): 194–199.
Redmond M.R., Mumford M.D. & Teach R. 1993. Putting creativity to work: Effects of leader behavior on subordinate creativity. *Organizational Behavior and Human Decision Processes* **55**(1): 120-151.
Rhodes M. 1961. An analysis of creativity. *The Phi Delta Kappan* **42**(7): 305–310.
Rogers E.M. 1983. *Diffusion of Innovations*. New York: Free Press.
Rogers E.M. 1995. *Diffusion of Innovations*. 4th Ed. New York: Free Press.
Schumpeter J.A. 1942. *Capitalism, Socialism and Democracy*. New York: Harper & Brothers.
Serrat O. 2017. Harnessing creativity and innovation in the workplace. In *Knowledge Solutions*: 903-910. Singapore: Springer.
Shafique I., Ahmad B. & Kalyar M.N. 2019. How ethical leadership influences creativity and organizational innovation: Examining the underlying mechanisms. *European Journal of Innovation Management* **23**(1): 114-133.
Shalley C.E. & Perry-Smith J.E. 2001. Effects of social-psychological factors on creative performance: The role of informational and controlling expected evaluation and modeling experience. *Organizational Behavior and Human Decision Processes* **84**(1): 1–22.
Sohn S.Y. & Jung C.S. 2010. Effect of creativity on innovation: Do creativity initiatives have significant impact on innovative performance in Korean firms?. *Creativity Research Journal* **22**(3): 320–328.
Soosay C.A. & Chapman R.L. 2006. An empirical examination of performance measurement for managing

continuous innovation in logistics. *Knowledge and Process Management* **13**(3): 192–205.
Sternberg R.J. & Lubart T.I 1991. An investment theory of creativity and its development. *Human Development* **34**(1): 1–31.
Stojcic N., Hashi I. & Orlic E. 2018. Creativity, innovation effectiveness and productive efficiency in the UK. *European Journal of Innovation Management* **21**(4): 564-580.
Tai H.T. & Mai N.Q. 2016. Proactive personality, organizational context, employee creativity and innovative capability: Evidence from MNCs and domestic corporations. *International Journal of Organizational Analysis* **24**(3): 370–389.
Tuan N., Nhan N., Giang P. & Ngoc N. 2016. The effects of innovation on firm performance of supporting industries in Hanoi, Vietnam. *Journal of Industrial Engineering and Management* **9**(2): 413–431.
Van de Ven A.H. 1986. Central problems in the management of innovation. *Management Science* **32**(5): 590–607.
van Esch E., Wei L.Q. & Chiang F.F. 2018. High-performance human resource practices and firm performance: the mediating role of employees' competencies and the moderating role of climate for creativity. *The International Journal of Human Resource Management* **29**(10): 1683–1708.
Poole M.S. & Van de Ven A.H. 1989. Using paradox to build management and organization theories. *Academy of Management Review* **14**(4): 562-578.
West M.A. 2002. Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology* **51**(3): 355–387.
West M.A. & Farr J.L. (eds.). 1990. *Innovation and Creativity at Work: Psychological and Organisational Strategies*. Chichester: John Wiley & Sons.
West M.A., Hirst G., Richter A. & Shipton H. 2004. Twelve steps to heaven: Successfully managing change through developing innovative teams. *European Journal of Work and Organizational Psychology* **13**(2): 269–299.
Wipulanusat W., Panuwatwanich K. & Stewart R.A. 2017. Workplace innovation: exploratory and confirmatory factor analysis for construct validation. *Management and Production Engineering Review* **8**(2): 57–68.
Woodman R.W., Sawyer J.E. & Griffin R.W. 1993. Toward a theory of organizational creativity. *Academy of Management Review* **18**(2): 293–321.
Yoo S., Jang S., Ho Y., Seo J. & Yoo M.H. 2019. Fostering workplace creativity: examining the roles of job design and organizational context. *Asia Pacific Journal of Human Resources* **57**(2): 127–149.
Zennouche M., Zhang J. & Wang B.W. 2014. Factors influencing innovation at individual, group and organisational levels: A content analysis. *International Journal of Information Systems and Change Management* **7**(1): 23–42.
Zhang J. & Wang X. 2018. Empirical study of supervisor support on organizational innovation based on employee creativity in ecological industry–Case study. *Ekoloji* **27**(106): 1099–1104.
Zheng X., Liu Z. & Gong X. 2016. Why does leader attention scope matter for innovation ambidexterity? The mediating role of transformational leadership. *Leadership and Organization Development Journal* **37**(7): 912-935.
Zhou J. & George J.M. 2001. When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal* **44**(4): 682–696.
Zhou Q., Hirst G. & Shipton H. 2012. Promoting creativity at work: The role of problem-solving demand. *Applied Psychology* **61**(1): 56–80.
Zhu C. & Chen X. 2014. High performance work systems and employee creativity: The mediating effect of knowledge sharing. *Frontiers of Business Research in China* **8**(3): 367–387.

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