



# NEGROS ORIENTAL STATE UNIVERSITY

GUIHULNGAN CITY CAMPUS

# THE DEVELOPMENT OF RESEARCH PRODUCTIVITY THEORY



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# INTRODUCTION

Productivity is the quintessential indicator of efficiency in any production system. The economic concept of productivity for research activity is related to a measurable form of research productivity called Fractional Scientific Strength (FSS). Productivity is the amount of work that can be completed in a given amount of time, while efficiency is how well resources, such as time, are used to complete a task.

Productivity has become a norm in bibliometrics to define research productivity as the number of publications per researcher, distinguishing it from impact, which is measured by citations. Pepe and Kurtz (2012) proposed a productivity indicator for individuals, the research impact quotient, which has similarities with Fractional Scientific Strength (FSS). Abramo and D'Angelo (2014) proposed a measurable form of research productivity through Fractional Scientific Strength (FSS) in keeping with the microeconomic theory of production. They presented the methodology for measuring FSS at various levels of analysis: individual, field, discipline, department, institution, region, and nation.

Examinations of academic staff research productivity explored individual and institutional factors contributing to productivity, including motivation (Jalal, 2020). A multilevel and multidisciplinary analysis of European universities highlights strong peer effects due to scientific quality of colleagues, international co-authorship, and the ability to attract foreign PhD students, lending support to a theory of research productivity in which institutional factors play a role (Bonaccorsi et al., 2021).



# INTRODUCTION

A study on increasing research productivity in higher educational institutions shows a robust increase in business research productivity between 2016 and 2022, notably in research aligned with Sustainable Development Goals (SDGs), with a remarkable surge in citations and open-access publications (Aithal, 2024).

Asher (2013) notes a dearth of studies and open-access publications in educational research, particularly on theory development and model creation or modification. Limited published articles authored by lone researchers highlight a gap in understanding the why's and how's of individual research productivity. Articulating the theoretical assumptions of a research study forces the researcher to address questions of why and how. Having a theory helps researchers identify the limits to generalizations and specify key variables influencing a phenomenon (Asher, 2013).

Studies on research productivity and academics' conceptions of research emphasize the contribution of doctoral students and the growing emphasis on how research productivity should be developed across disciplines and countries (Brew, 2015; Boud & Lee, 2009). This is supported by CHED Memorandum Order No. 19, series of 2015, which requires doctoral programs to create knowledge through dissertations and publication in peer-reviewed journals.



# INTRODUCTION

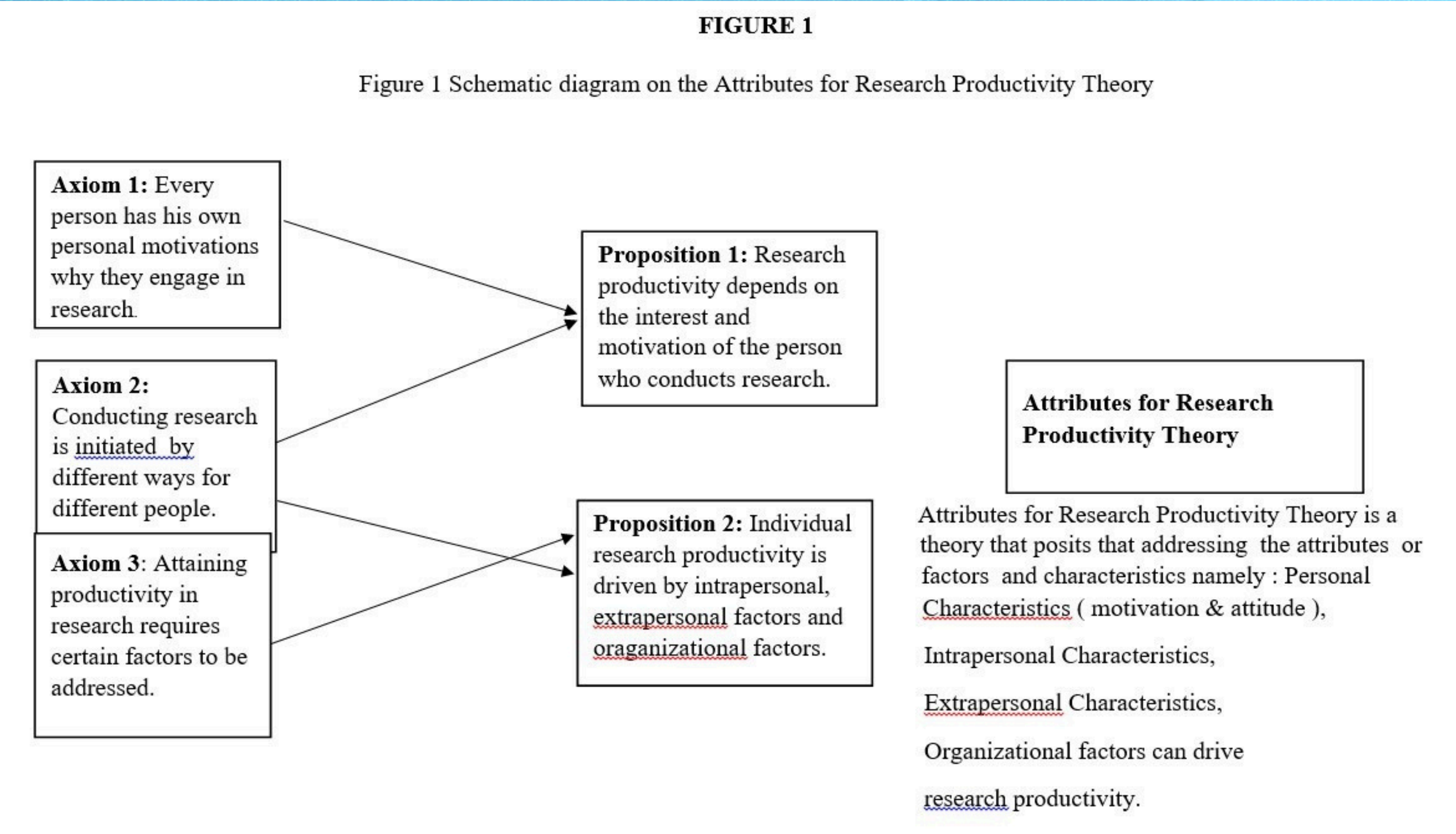
A comparative study of ASEAN research productivity found that Singapore leads in publication quality, Malaysia in publication quantity, and Indonesia in publication growth rate. Engineering and Technology and Life Sciences and Medicine are major contributors to ASEAN research productivity, which has become a key indicator of innovation capability (Sukoco et al., 2023).

The fundamental assumptions of this theory are by-products of the lived experiences of the proponent as a teacher-researcher and research coach. The proponent observed challenges in motivating pre-service and in-service teachers to conduct individual research, with many completing research only as academic requirements. Considering the varied challenges faced by researchers, the proposed research productivity model is believed to be useful for graduate and undergraduate researchers and basic and higher education researchers through proper support, guidance, mentoring, and coaching.





# THEORETICAL BASIS



## THE RESEARCH PRODUCTIVITY THEORY

The research productivity theory (PRT) is a product of abstract and logical reasoning based on axioms and propositions. It suggests that researchers can be research productive when personal factors such as interests and motivation, together with intrapersonal, extra-personal, and organizational factors, are addressed. The theory explains the “why” behind differences in research productivity by emphasizing internal factors, including cognitive or mental maps of the research environment such as rewards, incentives, promotions, and psychological drives that motivate researchers to engage in research.



# THEORETICAL BASIS

PRT posits that research productivity is primarily manifested through research publications, a major task of universities. Publications subjected to strict peer review and editing lead to high-quality journal outputs. The theory underscores the role of motivation, rewards, and recognition in encouraging researchers to publish quality articles, earn citations, and achieve high impact factors. It further highlights that researchers' attitudes and behaviors are influenced by interests, motivation, and intrapersonal and extra-personal factors, including the development of writing and communication skills necessary for productive research output.

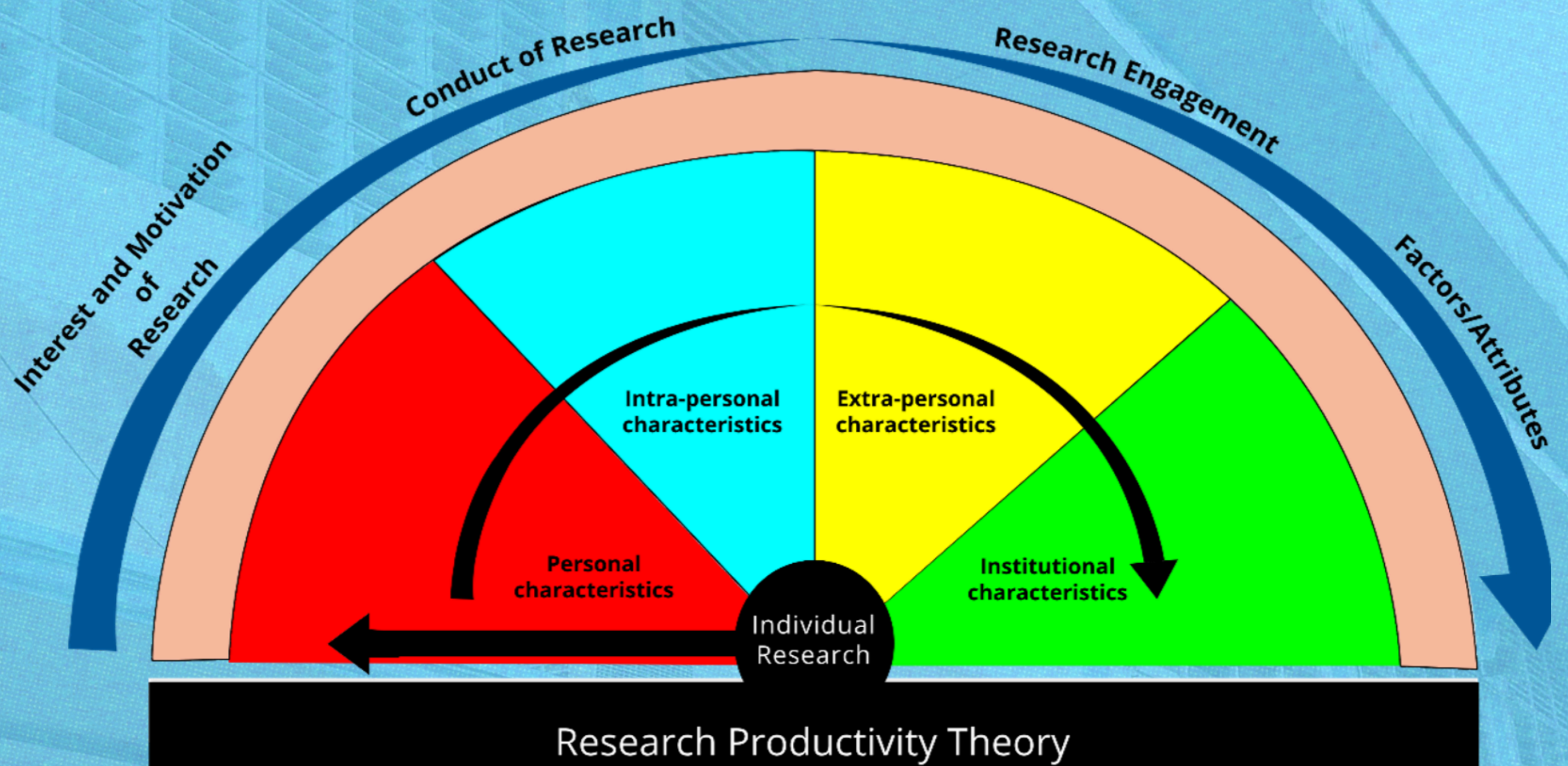
The theory also emphasizes extra-personal and organizational support systems that enhance research productivity. These include mentoring and coaching to strengthen research capabilities, as well as organizational factors such as research infrastructure, laboratories, libraries, software, and internet connectivity. Research productivity theory concludes that addressing personal, intrapersonal, extra-personal, and organizational factors collectively can drive higher levels of research productivity.

Research productivity theory posits that addressing the following factors can drive research productivity: (1) personal characteristics; (2) intrapersonal characteristics; (3) extra-personal characteristics; and (4) organizational factors.





# RESEARCH PRODUCTIVITY THEORETICAL MODEL



The schematic presentation of the theory as shown like the protractor to gauge the research productivity of researchers. The core of the schema in black color ( research productivity ) is the dependent variable. It is colored black meaning mystery to be discovered, the unknown to be known and explored. The second layer in colors red, light blue, yellow, and green represents the independent variables of the study. The outer layer in colored blue which arrow pointing from left to right (interest and motivation of research, conduct of research, research engagement) are personal factors that attribute research productivity.



# RESEARCH PRODUCTIVITY THEORY

The principal elements of this theoretical model are the **Four Characteristics of Research Attributes** which is composed of:

- (1) Personal Characteristics Interest/Motivation,
- (2) Interpersonal Characteristics,
- (3) Extra-personal Characteristics, and
- (4) Institutional /Organizational Characteristics.

## **Personal Characteristics Interest/Motivation:**

Is described as the researchers intrinsic and extrinsic motivation to initiate, plan, conduct, engage, pursue, persevere and persist in the quest for exploration, elaboration, explanation of the focused study of interest.

## **Intrapersonal Characteristics**

This refers to the researchers ability to sustain and keep the momentum of interest and motivation of research to the conduct of research, research engagement, writing of the research results and findings, preparing the publishable articles, and a lot more.





# RESEARCH PRODUCTIVITY THEORY

## Institutional /Organizational Characteristics

This refers to the researchers research environment, research support, research grants and funding, research advancement in trainings, seminars and workshops. Young scholars are more interested in conducting research and producing new knowledge than their older colleagues (Batool et al., 2021). Productivity decreases with age (Albert et al., 2016); this could be explained by differences in administrative burden, which tends to be greater for older scholars (Carayol & Matt, 2006).

## Extrapersonal Activities

This refers to the research mentoring and coaching given by the mentor from brainstorming sessions, ideation, conceptualization until final orals and beyond publication. Mentorship programs have been developed for faculty to build research careers (Squiers et al., 2017).

Article

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