

主要统计指标解释

科技活动 指在自然科学、农业科学、医药科学、工程与技术科学、人文与社会科学领域(简称科学技术领域)中,与科技知识的产生、发展、传播和应用密切相关的有组织的活动。可分为研究与试验发展(R&D)、研究与试验发展成果应用及相关的科技服务三类活动。

科技活动人员 指直接从事科技活动以及专门从事科技活动管理和为科技活动提供直接服务的人员。累计从事科技活动的实际工作时间占全年制度工作时间10%及以上的人员。(1)直接从事科技活动的人员包括:在独立核算的科学研究与技术开发机构、高等学校、各类企业及其他事业单位内设的研究室、实验室、技术开发中心及中试车间(基地)等机构中从事科技活动的研究人员、工程技术人员、技术工人及其他人员;虽不在上述机构工作,但编入科技活动项目(课题)组的人员;科技信息与文献机构中的专业技术人员;从事论文设计的研究生等。(2)专门从事科技活动管理和为科技活动提供直接服务的人员包括:独立核算的科学研究与技术开发机构、科技信息与文献机构、高等学校、各类企业及其他事业单位主管科技工作的负责人,专门从事科技活动的计划、行政、人事、财务、物资供应、设备维护、图书资料管理等工作的各类人员,但不包括保卫、医疗保健人员、司机、食堂人员、茶炉工、水暖工、清洁工等为科技活动提供间接服务的人员。

研究与试验发展(R&D) 指在科学技术领域,为增加知识总量以及运用这些知识去创造新的应用而进行的系统的创造性的活动,包括基础研究、应用研究、试验发展三类活动。

基础研究 指为了获得关于现象和可观察事实的基本原理的新知识(揭示客观事物的本质、运动规律,获得新发现、新学说)而进行的实验性或理论性研究,它不以任何专门或特定的应用或使用为目的。其成果以科学论文和科学著作为主要形式。

应用研究 指为获得新知识而进行的创造性研究,主要针对某一特定的目的或目标。应用研究是为了确定基础研究成果可能的用途,或是为达到预定的目标探索应采取的新方法(原理性)或新途径。其成果形式以科学论文、专著、原理性模型或发明专利为主。

试验发展 指利用从基础研究、应用研究和实际经验所获得的现有知识,为产生新的产品、材料和装置,建立新的工艺、系统和服务,以及对已产生和建立的上述各项作实质性的改进而进行的系统性工作。其成果形式主要是专利、专有技术、具有新产品基本特征的产品原型或具有新装置基本特征的原始样机等。在社会科学领域,试验发展是指把通过基础研究、应用研究获得的知识转变成可以实施的计划(包括为进行检验和评估实施示范项目)的过程。人文科学领域没有对应的试验发展活动。

研究与试验发展人员 指参与研究与试验发展项目研究、管理和辅助工作的人员,包括项目(课题)组人员,企业科技行政管理人员和直接为项目(课题)活动提供服务的辅助人员。

研究与试验发展人员全时当量 指全时人员数加非全时人员按工作量折算为全时人员数的总和。例如:有两个全时人员和三个非全时人员(工作时间分别为20%、30%和70%),则全时当量为 $2+0.2+0.3+0.7=3.2$ 人年。

专业技术人员 指从事专业技术工作和专业技术管理工作的人员,即企事业单位中已经聘任专业技术职务从事专业技术工作和专业技术管理工作的人员,以及未聘任专业技术职务,现在专业技术岗位上工作的人员。包括工程技术人员,农业技术人员,科学研究人员,卫生技术人员,教学人员,经济人员,会计人员,统计人员,翻译人员,图书资料、档案、文博人员,新闻出版人员,律师、公证人员,广播电视播音人员,工艺美术人员,体育人员,艺术人员及企业政治思想工作人员,共十七个专业技术职务类别。

科技活动经费筹集 指从各种渠道筹集到的计划用于科技活动的经费,包括政府资金、企业资金、事业单位资金、金融机构贷款、国外资金和其他资金等。

政府资金 指从各级政府部门获得的计划用于科技活动的经费,包括科学事业费、科技三项费、科研基建费、科学基金、教育部门事业费中计划用于科技活动的经费以及政府部门预算外资金中计划用于科技活动的经费等。

企业资金 指从自有资金中提取或接受其他企业委托的、科研院所和高校等事业单位接受企业委托获得的,计划用于科研和技术开发的经费。不包括来自政府、金融机构及国外的计划用于科技活动的资金。

金融机构贷款 指从各类金融机构获得的用于科技活动的贷款。

科技活动经费内部支出 指报告年内用于科技活动的实际支出包括劳务费、科研业务费、科研管理费,非基建投资购建的固定资产、科研基建支出以及其他用于科技活动的支出。不包括生产性活动支出、归还贷款支出及转拨外单位支出。

劳务费 指以货币或实物形式直接或间接支付给从事科技活动人员的劳动报酬及各种费用。包括各种形式的工资、津贴、

奖金、福利、离退休人员费用、人民助学金等。

固定资产购建费 指报告年内使用非基建投资购建的固定资产和用于科研基建投资的实际支出额,即固定资产实际支出和科研基建投资实际完成额之和。固定资产是指长期使用而不改变原有实物形态的主要物资设备、图书资料、实验材料和标本以及其他设备和家具、房屋、建筑物。

新产品 指采用新技术原理、新设计构思研制、生产的全新产品,或在结构、材质、工艺等某一方面比原有产品有明显改进,从而显著提高了产品性能或扩大了使用功能的产品。既包括政府有关部门认定并在有效期内的新产品,也包括企业自行研制开发,未经政府有关部门认定,从投产之日起一年之内的新产品。

专利 是专利权的简称,是对发明人的发明创造经审查合格后,由专利局依据专利法授予发明人和设计人对该项发明创造享有的专有权。包括发明、实用新型和外观设计。

发明 指对产品、方法或者其改进所提出的新的技术方案。

实用新型 指对产品的形状、构造或者其结合所提出的适于实用的新的技术方案。

外观设计 指对产品的形状、图案、色彩或者其结合所作出的富有美感并适于工业上应用的新设计。

普通高等学校 指按照国家规定的设置标准和审批程序批准举办,通过国家统一招生考试,招收高中毕业生为主要培养对象,实施高等学历教育的全日制大学、独立设置的学院和高等专科学校、高等职业学校和其他机构。

成人高等学校 指按照国家规定的设置标准和审批程序举办的,通过全国成人高等教育统一招生考试,招收具有高中毕业或同等学力的人员为主要培养对象,利用脱产、业余或函授等多种形式对其实施高等学历教育的学校。包括广播电视大学、职工高等学校、农民高等学校、管理干部学院、教育学院、独立函授学院、其他机构。

Explanatory Notes on Main Statistics Indicators

Scientific and Technological Activities (S&T Activities) refer to organized activities which are closely related to the creation, development, dissemination and application of the scientific and technical knowledge in the fields of natural sciences, agricultural science, medical science, engineering and technological science, humanities and social sciences (referred to as scientific and technological fields). S&T activities can be classified in to 3 categories: research and development (R&D) activities, application of R&D results, and related S&T services.

Personnel Engaged in S&T Activities refer to personnel directly engaged in S&T activities, in the management of S&T activities, and in providing direct service to S&T activities, who spend over 10% of the total working hours in a year in S&T activities. (1) Personnel directly engaged in S&T activities include researchers, engineers, technicians and other related personnel engaged in S&T activities in independent-accounting R&D institutions, institutions of higher learning, and in research institutes, laboratories, technology development centers and central experiment workshops under enterprises and institutions. Also included are people working in S&T research project teams, professional and technical personnel working in S&T information archiving institutes, and graduate students working on the design of their thesis. (2) Personnel engaged in the management of S&T activities and in providing direct service to S&T activities include senior management people responsible for S&T activities in independent-accounting R&D institutions, S&T information archiving institutes, institutions of higher learning, and in enterprises and institutions where S&T activities are undertaken. Also included are people responsible for the planning, administration, personnel management, financial management, logistics supply, equipment maintenance, information and library management that are related with S&T activities. People providing indirect services are excluded, such as security, medical service, drivers, plumbers, cleaners and those providing catering and related service.

Research and Development (R&D) refers to systematic and creative activities in the field of science and technology aiming at increasing the knowledge and using the knowledge for new application. R&D includes 3 categories of activities: basic research, applied research and experiments and development.

Basic Research refers to empirical or theoretical research aiming at obtaining new knowledge on the fundamental principles of phenomena of observable facts to reveal the nature and law of movement of objects and to acquire new discoveries or new theories. Basic research takes no specific or designated application as the aim of the research. Results of basic research are mainly released or disseminated in the form of scientific papers or monographs.

Applied Research refers to creative research aiming at obtaining new knowledge on a specific objective or target. Purpose of the

applied research is to identify the possible use of results from basic research, or to explore new (fundamental) methods or new approaches. Results of applied research are expressed in the form of scientific papers, monographs, fundamental models or invention patents.

Experiments and Development refer to systematic activities aiming at using the knowledge from basic and applied researches or from practical experience to develop new products, materials and equipment, to establish new production process, systems and services, or to make substantial improvement on the existing products, process or services. Results of experiment and development activities are embodied in patents, exclusive technology, monotype of new products or equipment. In social sciences, experiment and development activities refer to the process of converting the knowledge from basic or applied researches into feasible programmes (including conduct of demonstration projects for assessment and evaluation). There is no experiment and development activities in the science of humanities. R&D Personnel refer to persons engaged in research, management and supporting activities of R&D, including persons in the project teams, persons engaged in the management of S&T activities of enterprises and supporting staff providing direct service to the research projects.

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Full-time Equivalent of R&D Personnel refers to the sum of the full-time persons and the full-time equivalent of part-time persons converted by workload. For instance, if there are 2 full-time persons and 3 part-time workers (20%, 30% and 70% of working hours respectively on R&D activities), the full-time equivalent is $2+0.2+0.3+0.7=3.2$ person-years.

Professional and Technical Personnel refer to person engaged in professional and technical work or in the management of professional and technical activities, i. e., people with professional or technical positions who are engaged in professional and technical work or in the management of professional and technical activities, and people without professional or technical positions but are working on professional or technical posts. They include professionals and technicians working in 17 categories of technical occupations including engineering, agriculture, scientific researches, medical service, teaching, economic research and application, accounting, statistics, translation, libraries, archives, cultural and museum service, journalism and publication, lawyers, notarization service, radio and television broadcasting, handicraft and fine arts, sports, performing art, and political workers in enterprises.

Funding for S&T Activities refers to funds obtained from various sources for S&T activities, including government funds, self-raised funds by enterprises, self-raised funds by institutions, loans from financial institutions, foreign funds and other funds.

Government Funds refer to funds obtained from government agencies at all levels to be used for S&T activities, including fund for scientific undertakings, 3 kinds of fund for S&T activities, fund for capital construction for scientific researches, science fund, funds from education expenditures by education departments for S&T activities, and extra-budget fund from government agencies for S&T activities.

Self-raised Funds by Enterprises refers to self-raised funds by enterprises from their own expenditure or from other enterprises and funds received by universities or research institutions from enterprises for scientific research or technical development projects. Excluded in this category are funds from government agencies, financial institutions or from foreign institutions. Loans from Financial Institutions refer to loans from various financial institutions for S&T activities.

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Total Internal Expenditure of Funds on R&D refers to the real expenditure of surveyed units on their own R&D activities (basic research, application study, test and development) including direct expenditure on R&D activities, indirect expenditure of management and services on R&D activities, expenditure on capital construction and material processing by others. Excluding the expenditure on production activities, return of loan, and fees transferred to cooperated and entrusted agencies on R&D activities.

Service Fees refer to direct or indirect payment, in cash or in kind, made to personnel engaged in S&T activities as remuneration and other fees. They include, in various forms, salaries, subsidies, bonus, benefits, retirement pension, stipend, etc.

Purchase or Construction of Fixed Assets refers to the fixed assets purchased or constructed using funds other than the investment in capital construction, and the actual expenditure on capital construction for scientific researches. In other words, it is the sum of the actual expenditure on fixed assets and the accomplished investment in capital construction for scientific researches. Fixed

assets refer to main materials and equipment, literatures and documents in libraries, materials for experiments, specimen, instruments, furniture ,buildings and constructions that can be used for a long time without changing the form and shape of those articles or constructions.

New Products refer to new products produced with new technology and new design, or products that represent noticeable improvement in terms of structure, material, or production process so as to improve significantly the character or function of the older versions. They include new products certified by relevant government agencies within the period of certification, as well as new products designed and produced by enterprises within a year without certification by government agencies.

Patent is an abbreviation for the patent right and refers to the exclusive right of ownership by the inventors or designers for the creation or inventions, given from the patent offices after due process of assessment and approval in accordance with the Patent Law.

Patents are granted for inventions, utility models and designs.

Inventions refer to the new technical proposals to the products or methods or their modifications.

Utility Models refer to the practical and new technical proposals on the shape and structure of the product or the combination of both.

Designs refer to the aesthetics and industrially applicable new designs for the shape, pattern and color of the product, or their combinations.

Regular Institutions of Higher Learning refer to educational establishments set up according to the government evaluation and approval procedures, enrolling graduates from senior secondary schools and providing higher education courses and training for senior professionals. They include full-time universities, colleges, high professional schools, high vocational universities and other institutions.

Institutions of Higher Learning for Adults refer to educational establishments, set up in line with the government evaluation and approval procedures, enrolling personnels with senior secondary school or equivalent education as main training objects, and providing higher education courses in many forms of full time, spare time, or correspondence for adults. Institutions of higher learning for adults include Radio and TV universities, schools of high education for staff and workers and peasants, colleges for management cadres, pedagogical colleges, independent correspondence colleges and other institutions.